

CFD-50L

SERVICE MANUAL

*AEP Model
UK Model*



SPECIFICATIONS

Model Name Using Similar Mechanism	CD Section	CFD-60L
	Tape Section	CFS-201L
Optical Device Name		KSM-210BAN
Tape Transport Mechanism Type		MF-50RP-75D

CD player section

System	Compact disc digital audio system	Frequency response	20 — 20,000 Hz ± 2 dB
Laser diode properties	Material: GaAlAs Wavelength 780 nm Emission duration: Continuous Laser output: Less than 44.6 μ W *This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block.	Wow and flutter	Below measurable limit

Radio section

Frequency range

	FM	MW	LW	SW
AEP, WG, UK model	87.6—107MHz	531—1602kHz	153—281kHz	5.95—18MHz
IT model	87.5—108MHz	526.5—1606.5kHz	148.5—283.5kHz	
Intermediate frequency	10.7MHz	455kHz		

— Continued on next page —

CD RADIO CASSETTE-CORDER
SONY[®]



Tape recorder section and general

Recording system	4-track 2-channel stereo
Frequency response	70 – 10,000 Hz (with TYPE I < NORMAL > cassette)
Speaker	Full-range speakers: 10 cm dia., cone type
Power output	Full-range speakers: 2.3W+2.3W (at 3.2 ohms, 315Hz, 10% harmonic distortion)
Input	Mixing microphone input jack (minijack) Sensitivity 2.5 mV For low impedance microphone
Output	Headphones jack (stereo minijack) For 16–68 ohms impedance headphones

Power requirements	AEP, WG, IT model	220 V AC, 50 Hz
	UK model	240 V AC, 50 Hz

Power consumption	DC 9V, 6 R20 (size D) batteries	
	AC 25 W (AEP, WG, IT model)	
	AC 28 W (UK model)	

Battery life	(hours)	
	FM recording	Playback
	Sony SUM-1 (NS)	Approx. 11
Sony ALkaline AM1 (N)	Approx. 17	Approx. 12

Dimensions	590 × 172 × 205 mm (w/h/d) (23 ¹ / ₄ × 6 ⁷ / ₈ × 8 ¹ / ₈ inches) incl. projecting parts and controls
Weight	Approx. 4.6kg incl. batteries (Approx. 10 lb 2 oz).
Supplied accessory	AC power cord (1)

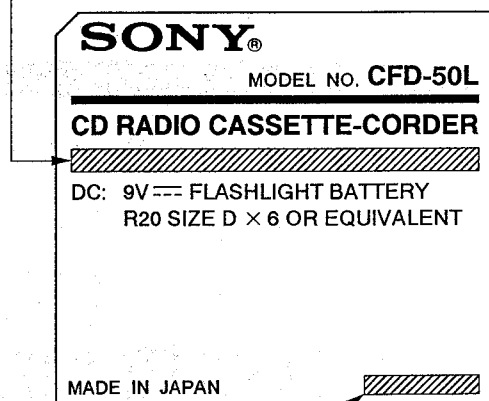
Design and specifications subject to change without notice.

MODEL IDENTIFICATION

– Model Number Label –

AEP, WG, IT model: AC: 220V ~50Hz 25W

UK model: AC: 240V ~50Hz 28W



AEP, IT model : 4-936-042-01
WG model : 4-937-033-01
UK model : 4-936-043-01

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

• ABBREVIATION

WG: West Germany

IT: Italian

SECTION 1

SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

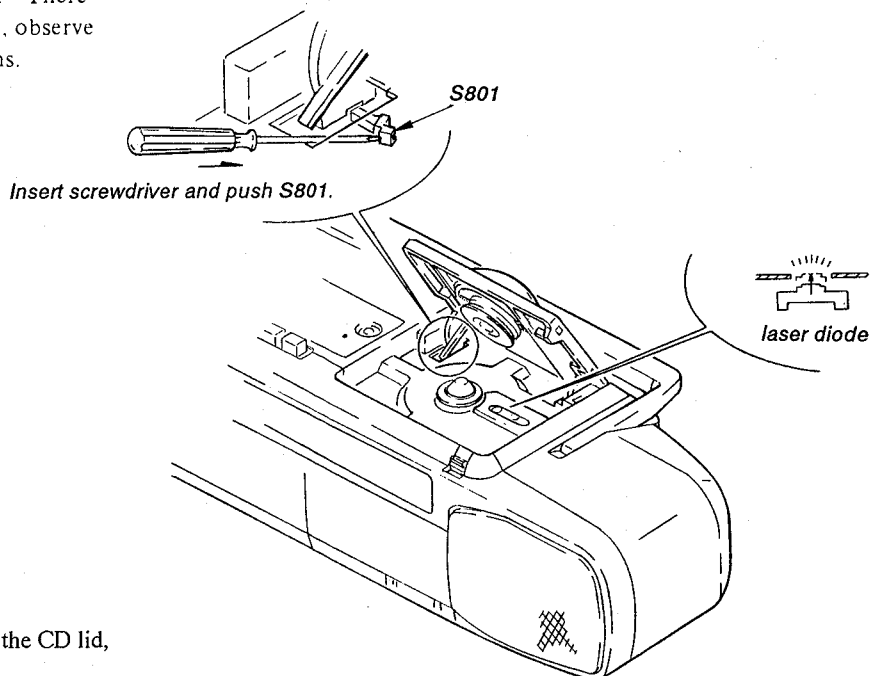
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 25 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

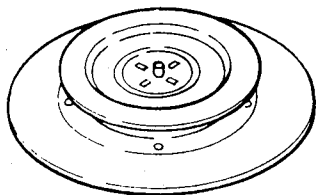
1. Make Function switch to CD position with no disc inserted.
2. Open the lid for CD.
3. Turn on S801 as following figure.
4. Press ► key.
5. Confirm the laser diode emission while observing the objecting lens. When there is no emission, Auto Power Control circuit or Optical Pick-up is broken. Objective lens moves up and down once for the focus search.



CHUCK PLATE JIG ON REPAIRING

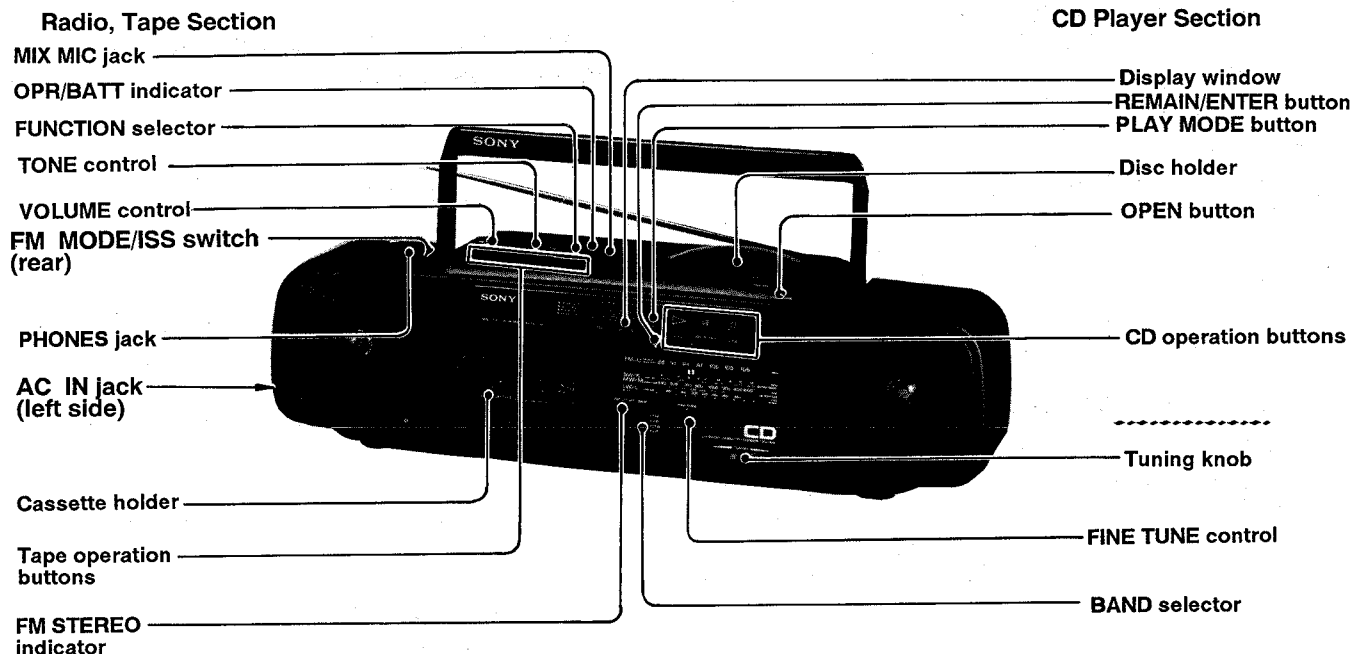
On repairing CD section, playing a disc without the CD lid, use Chuck Plate Jig.

- Code number of Chuck Plate Jig: X-4918-255-1



SECTION 2 GENERAL

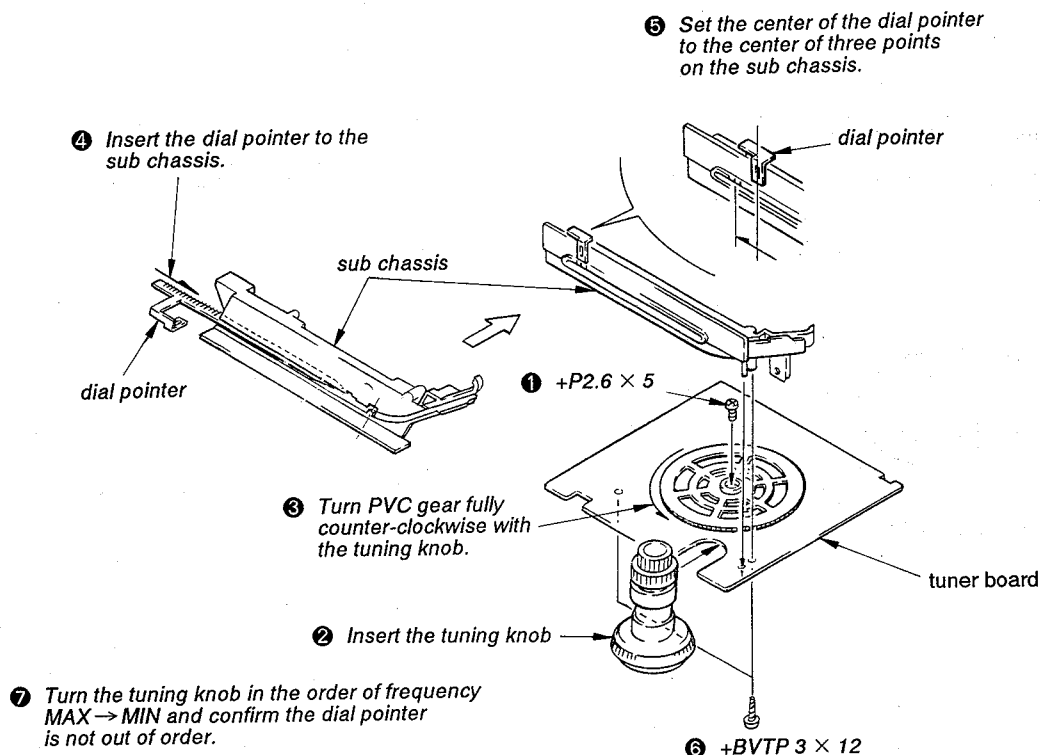
• Parts Identification



SECTION 3 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

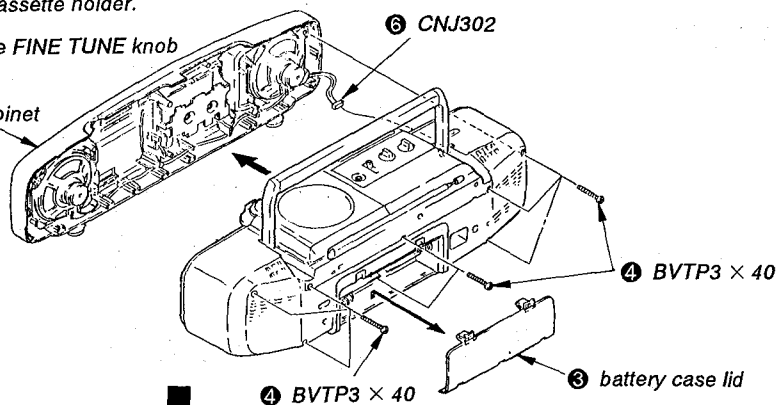
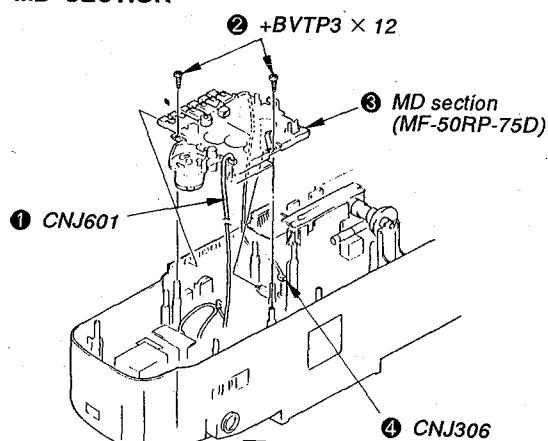
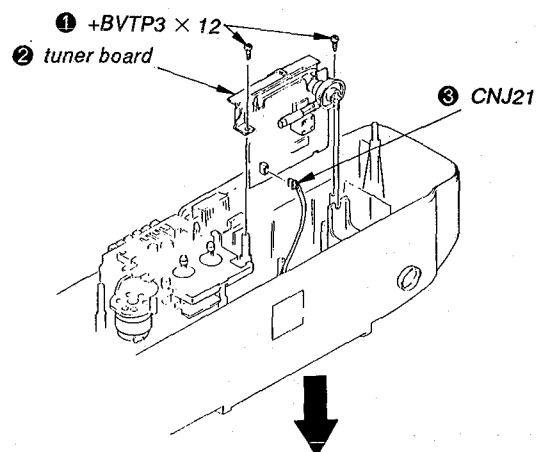
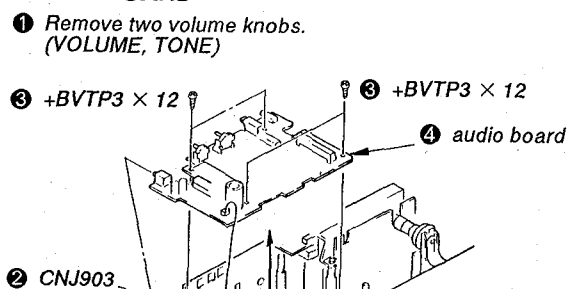
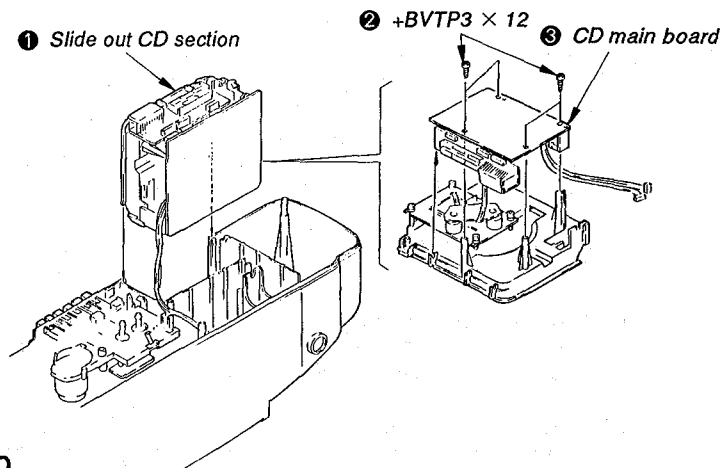
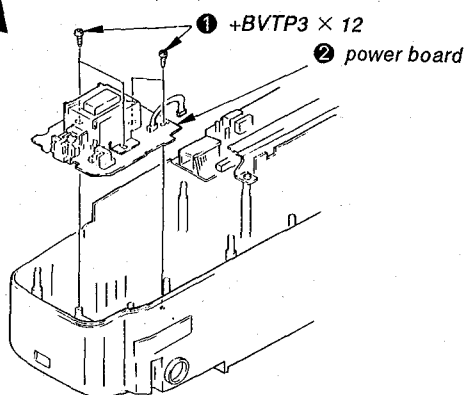
DIAL POINTER SETTING



FRONT CABINET

- ① Open cassette holder.
- ② Remove FINE TUNE knob

⑤ front cabinet

**MD SECTION****TUNER BOARD****AUDIO BOARD****CD MAIN BOARD****POWER BOARD**

SECTION 4

MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.
- Power supply voltage: 9V dc.

Torque Measurement

Torque	Meter Reading	Torque Meter
Forward	22.5 – 55 g•cm (0.31 – 0.76 oz•inch)	CQ-102C
Fast Forward and Rewind	60 – 120 g•cm (0.83 – 1.67 oz•inch)	CQ-201B
Back Tension	2 – 5g•cm (0.03 – 0.07 oz•inch)	CQ-102C

Tape Tension Measurement

Meter	Meter Reading
CQ-403A	more than 150 g (5.29 oz)

SECTION 5

ELECTRICAL ADJUSTMENTS

PRECAUTION

- Adjustments should be performed in the order given. Generally playback circuit adjustments should be completed before performing recording circuit adjustments.
- Adjustments should be performed for both L-ch and R-ch. Switches and controls should be set as follows unless otherwise specified.

- Positions of switches and control knobs
TONE maximum

- Standard recording position**
Adjust the VOLUME knob so that the following regulated input/output signal levels are obtained.

- Standard input level**

0 dB=0.775 V

Input Pin	MIX MIC
Signal source impedance	300 Ω
Input signal level	2.5 mV (– 50 dB)
Frequency	1 kHz

- Standard output level**

Output Pin	Speaker (L, R)	PHONES
Signal source impedance	3.2 Ω	32 Ω
Output signal level	0.775 V (0 dB)	0.245 V (– 10 dB)

5-1. TAPE RECORDER SECTION

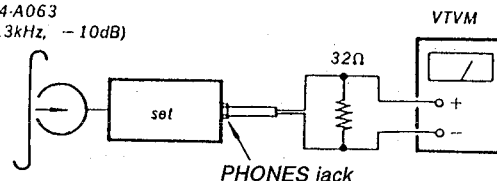
Test Tape

Type	Signal	Used for
WS-48A	3 kHz, 0 dB	tape speed adjustment
P-4-A063	6.3kHz, – 10 dB	head azimuth adjustment

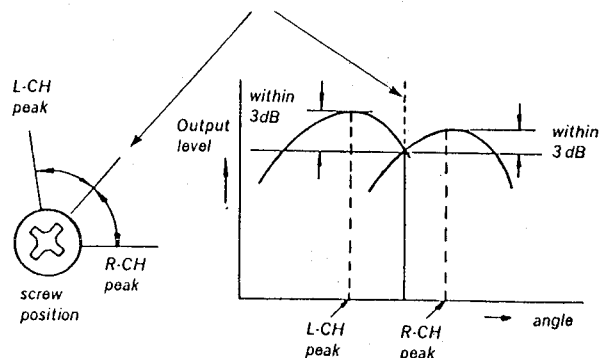
REC/PB Head Azimuth Adjustment

Procedure:

- Mode: playback
test tape
P-4-A063
(6.3kHz, – 10dB)

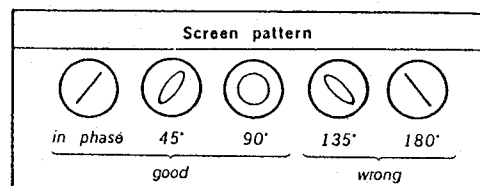
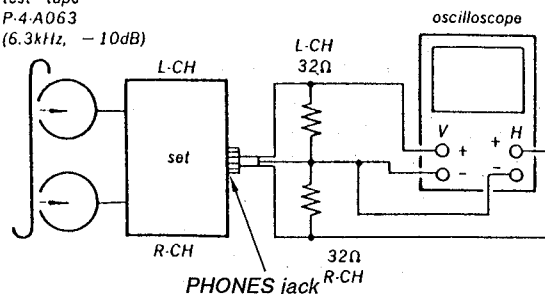


- Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 3 dB.

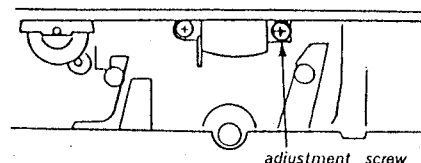


- Phase Check
Mode: playback

test tape
P-4-A063
(6.3kHz, – 10dB)



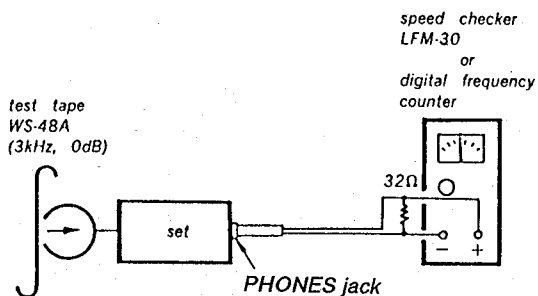
Adjustment Location:



Tape Speed Adjustment

Procedure:

Mode: playback

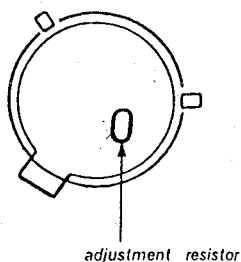


Adjustment Value:

Speed checker	Digital frequency counter
- 2.5 to +1.0%	2,925 - 3,030 Hz

Frequency difference between the beginning and the end of the tape should be within 1% (30 Hz).

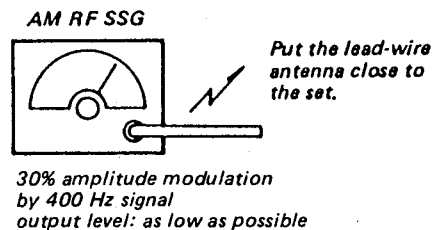
Adjustment Location:



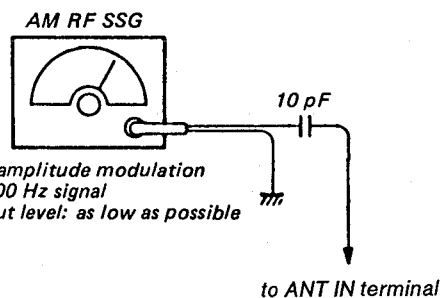
5-2. TUNER SECTION

[AM]

FUNCTION switch: RADIO
FINE TUNE control: Mechanical center
BAND switch: MW, LW

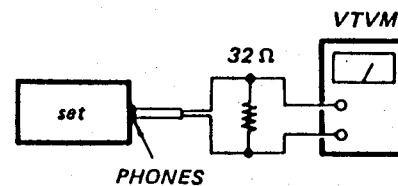
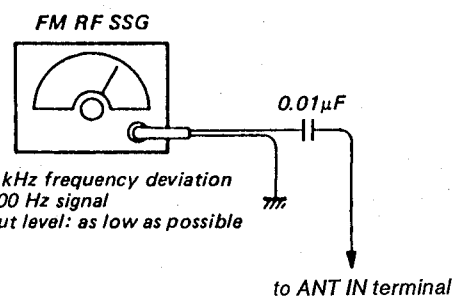


BAND switch: SW



[FM]

FUNCTION switch: RADIO
BAND switch: FM



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM IF ADJUSTMENT

Adjust for a maximum reading on VTVM.

T1	455 kHz
----	---------

LW FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM.

L8	145 kHz 140 kHz (Italian)
CT8	295 kHz 293 kHz (Italian)

LW TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM.

L7	160 kHz
CT7	260 kHz

MW FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM.

L4	520 kHz 516 kHz (Italian)
CT4	1,680 kHz 1,630 kHz (Italian)

MW TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM.

L3	600 kHz
CT3	1,400 kHz

SW FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM.

L6	5.8 MHz
CT6	18.4 MHz

SW TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM.

L5	5.8 MHz
CT5	18.4 MHz

FM FREQUENCY COVERAGE ADJUSTMENT

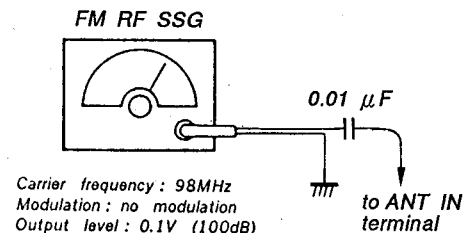
Adjust for a maximum reading on VTVM.

L2	87.35 MHz
CT2	107.8 MHz 108.3 MHz (Italian)

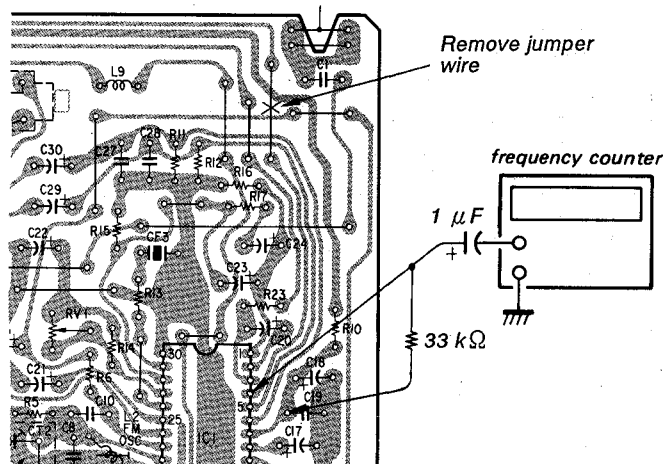
FM TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM.

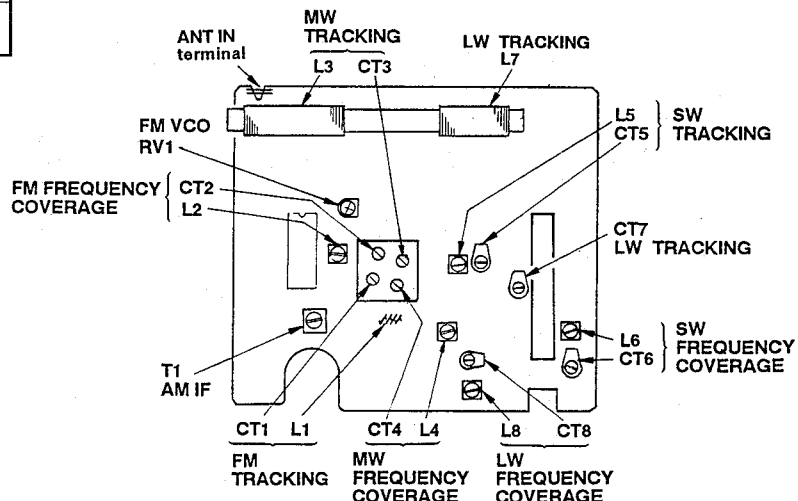
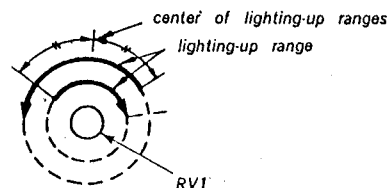
L1	87.35 MHz
CT1	107.8 MHz 108.3 MHz (Italian)

FM VCO Adjustment**A) Regular Method****Procedure:**

1. Remove jumper wire as shown below.
2. Connect frequency counter to the positions shown below.
3. Tune the set to 98 MHz.
4. Adjust RV1 for 76 kHz $\pm$ 500 Hz reading on the frequency counter.
5. After adjustment, connect jumper wire removed in step 1.

**B) Simple Method****Procedure:**

1. Tune the set to the FM stereo broadcasting signal.
2. Turn RV1 clockwise or counterclockwise and memorize the lighting-up range of the FM STEREO lamp.
3. Secure RV1 at the center of the lighting-up range of both turns as shown below.



5-3. CD SECTION

Notes on Adjustment

1. Perform adjustment in service mode.
After adjustment, be sure to release service mode.
2. Perform adjustments in the order given.
3. Use the disc (YEDS-18, Part No. 3-702-101-01) only when so indicated.

Before Adjustment

Put the set into service mode and perform the following checks. Repair if there are any problems.

• Sled Motor Check

1. Press ► key, then press ■ key.
2. Press ►►, ◄◄ keys and confirm that the FOP moves smoothly from the innermost to outermost circumference and back smoothly and with no catching or abnormal noises.
►► : FOP moves to the outer circumference
◄◄ : FOP moves to the inner circumference

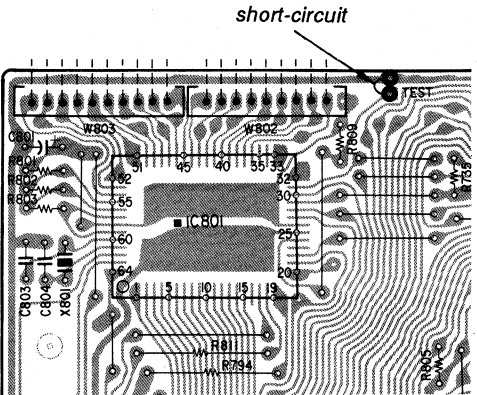
• Focus Search Check

1. Press ► key. (Focus search operation is performed continuously.)
2. Look at the FOP objective lens and confirm that it moves up and down smoothly, with no catching or abnormal noises.
3. Press ■ key.
Confirm that focus search operation stops. If it does not, press ■ key again longer.

How to Put the Set into Service Mode

1. Short-circuit following portions on the CD main board.
2. Tune the POWER on.

CD main board (conductor side)

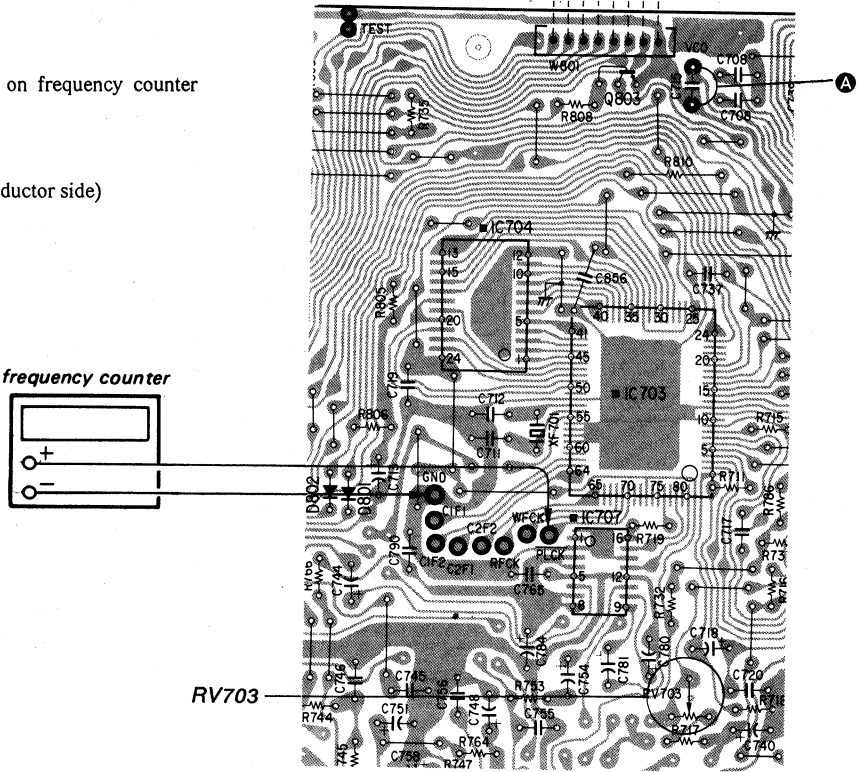


VCO Adjustment

Adjustment Procedure:

1. Short-circuit Ⓐ portion CD main board.
2. Adjust with RV703 so that the reading on frequency counter becomes 4.3218 MHz.
3. Release the short-circuit Ⓐ portion.

Adjustment Location: CD main board (conductor side)

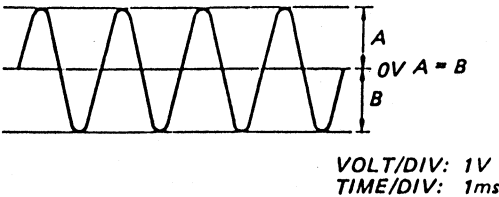


E-F Balance Adjustment

This adjustment is to be done when the optical block is replaced.

Adjustment Procedure:

1. Connect the oscilloscope between IC701 pins ① and ②.
2. Put the set into service mode. (See page 9)
3. Press the ►► and ◄◄ keys to move the FOP to the center.
4. Insert disc (YEDS-18) and press ► key.
5. Adjust RV701 so that the oscilloscope traverse waveform is symmetrical, as shown in the figure below.
6. Release service mode after adjustment is completed.



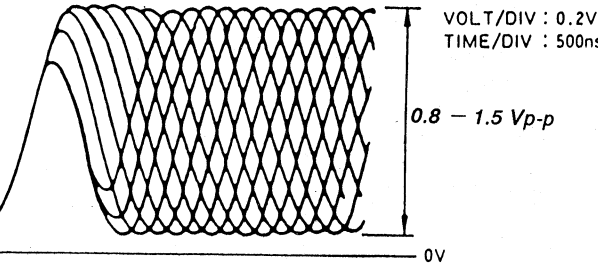
Focus Bias Adjustment

This adjustment is to be done when the optical block is replaced.

Adjustment Procedure:

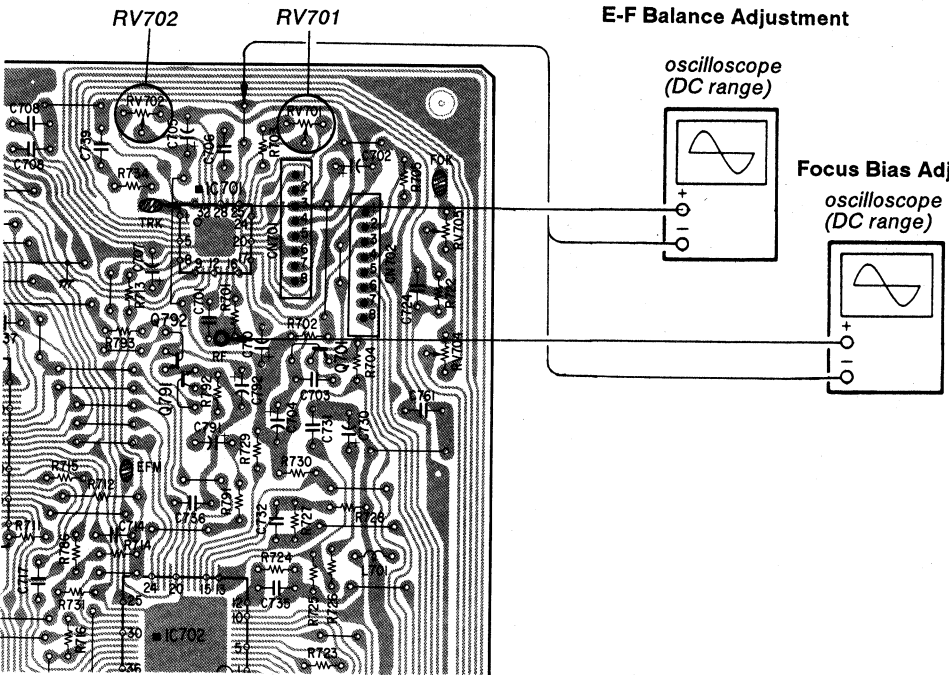
1. Connect the oscilloscope between IC701 pins ④ and ⑤.
2. Put the set into service mode. (See page 9)
3. Press the ►► and ◄◄ keys to move the FOP to the center. (Move the FOP to the music area on the disc to enable easy visibility of the eye pattern.)
4. Insert disc (YEDS-18) and press ► key.
5. Adjust RV702 so that the oscilloscope waveform is as shown in the figure below (eye pattern).
A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.
6. Release service mode after adjustment is completed.

- RF signal reference waveform (eye pattern)



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

Adjustment Location: CD main board (conductor side)



Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

Symptoms	Gain	
	Focus	Tracking
• The time until music starts becomes longer for STOP → PLAY or automatic selection (◀▶ buttons pressed. (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP → PLAY or automatic selection (◀▶ buttons pressed.)	—	low
• Sound is interrupted during PLAY. Or time counter display stops progressing.	—	low
• More poise during 2-axis device operation.	high	high

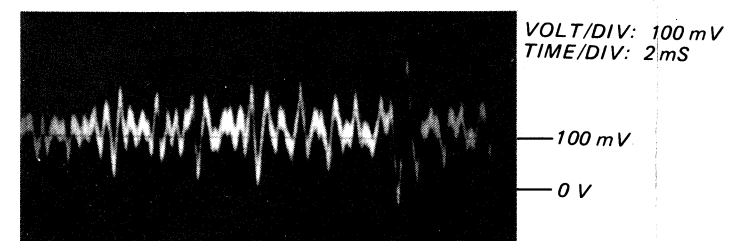
The following is a simple adjustment method.

— Simple Adjustment —

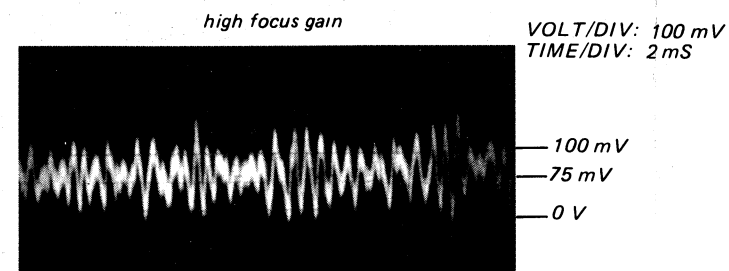
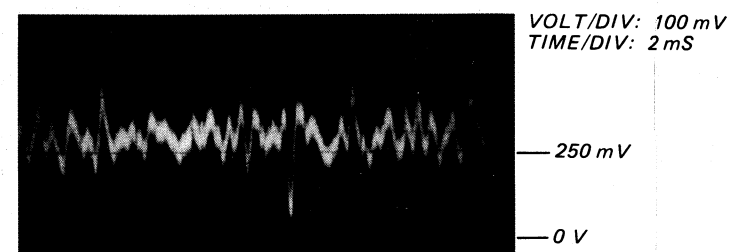
Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:

1. Keep the set horizontal.
(If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
2. Insert disc (YEDS-18) and press ►PLAY button.
3. Connect the oscilloscope between IC701 pins ① and ②⑥.
4. Adjustment RV705 so that the waveform is as shown in the figure below. (focus gain adjustment)

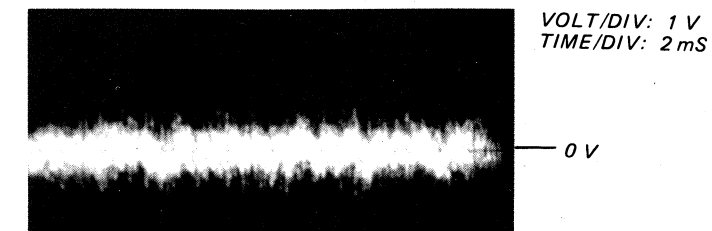


- Incorrect Examples (DC level changes more than on adjusted waveform)

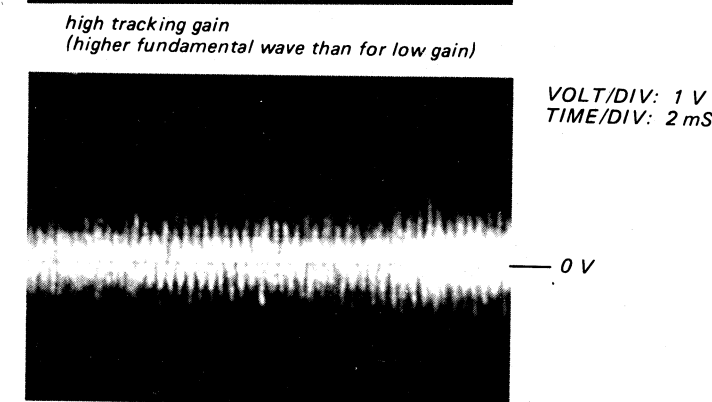
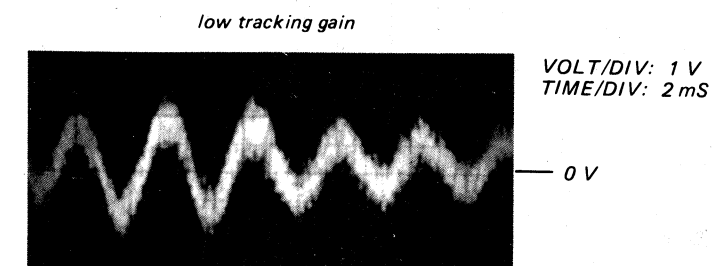


5. Connect the oscilloscope between IC701 pins ① and ②⑥.

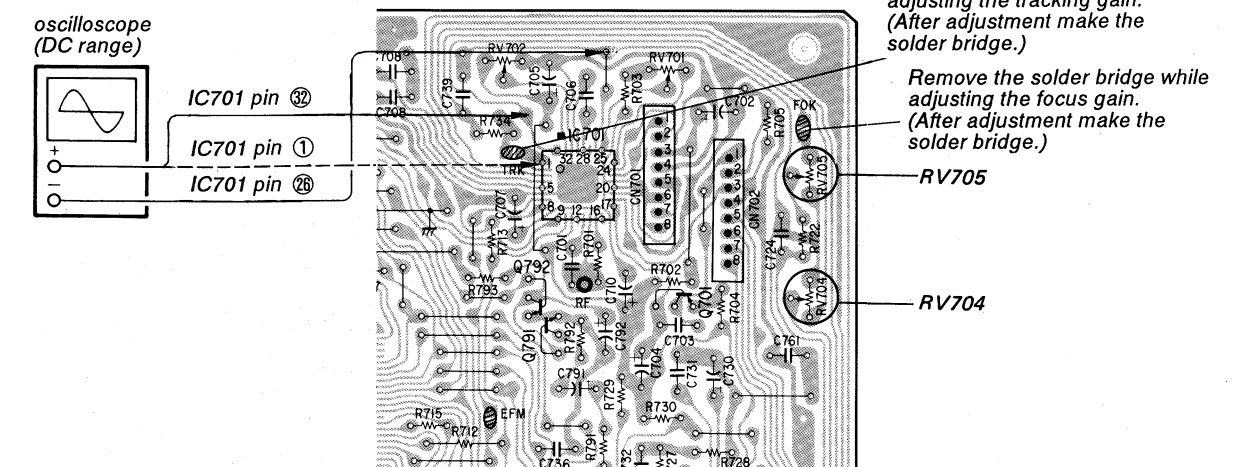
6. Adjust RV704 so that the waveform is as shown in the figure below. (tracking gain adjustment)



- Incorrect Examples (fundamental wave appears)



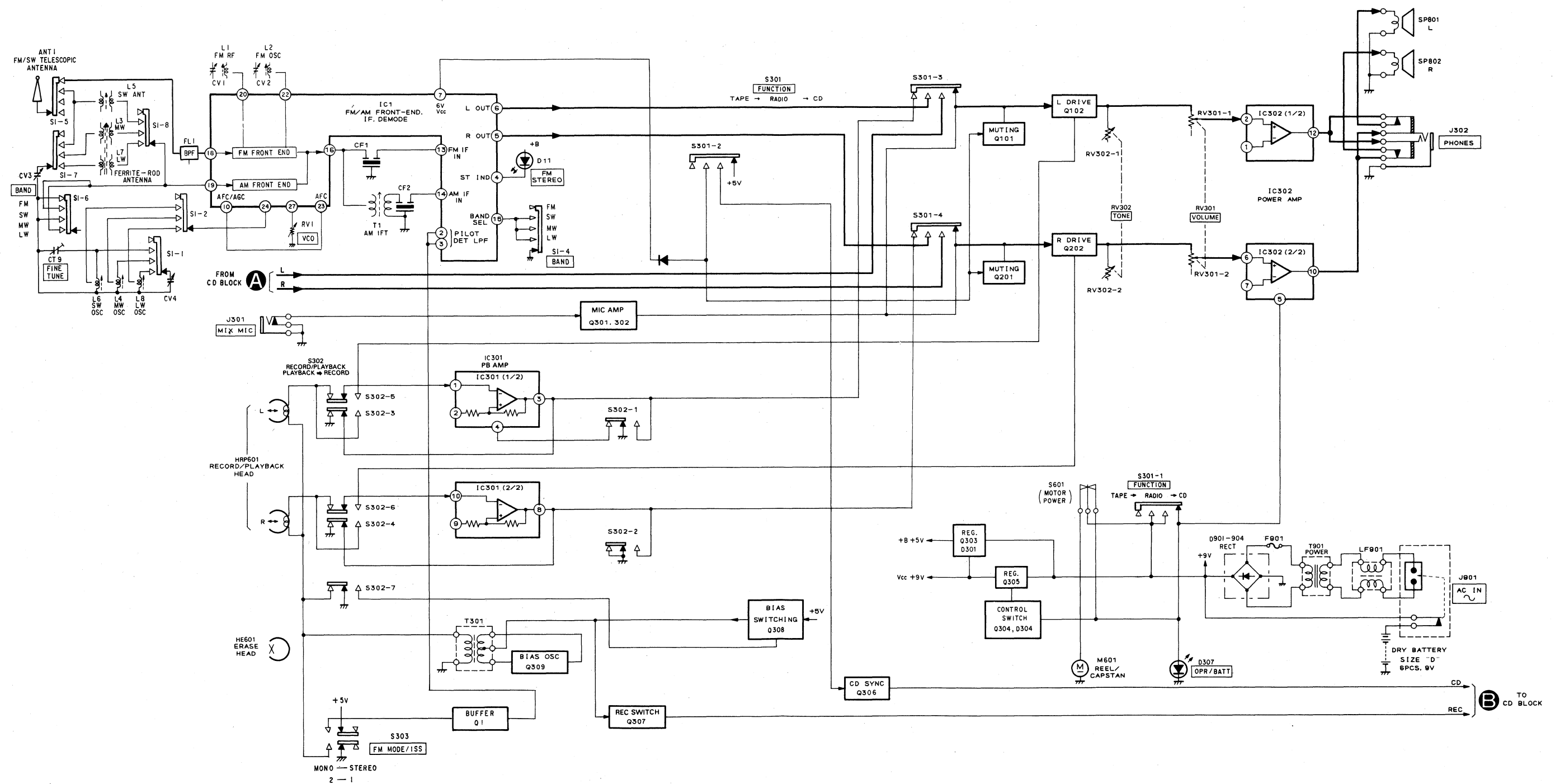
Adjustment Location: CD main board (conductor side)



6-1. CD SECTION BLOCK DIAGRAM



6-2. TUNER, AUDIO SECTION BLOCK DIAGRAM



6-3. PRINTED WIRING BOARDS

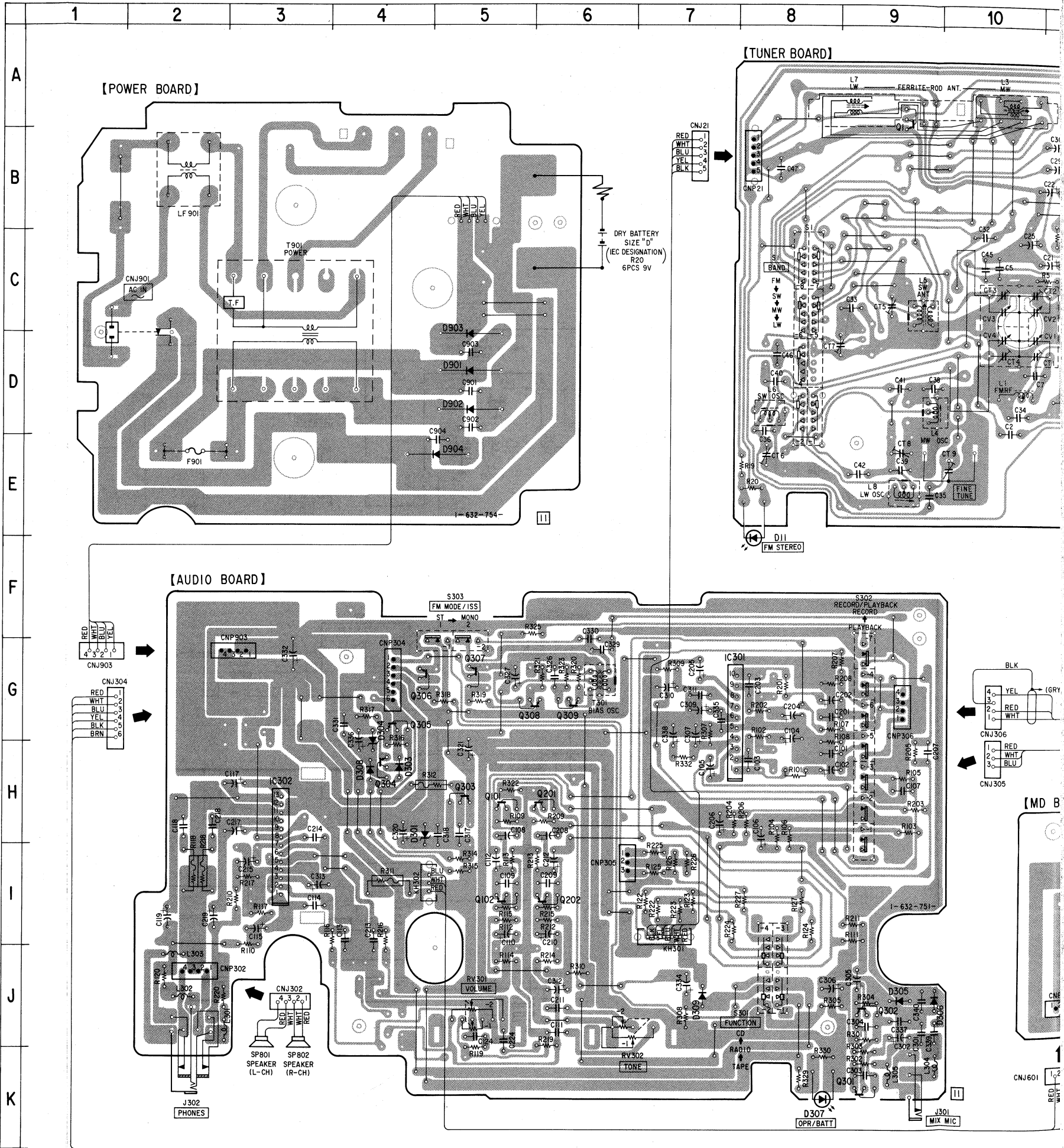
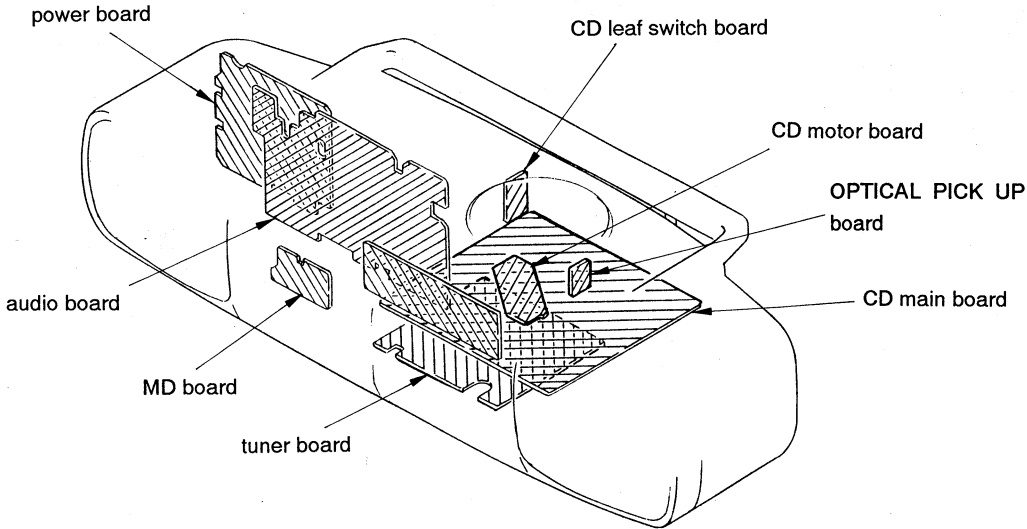
Note on Printed Wiring Boards:

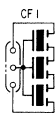
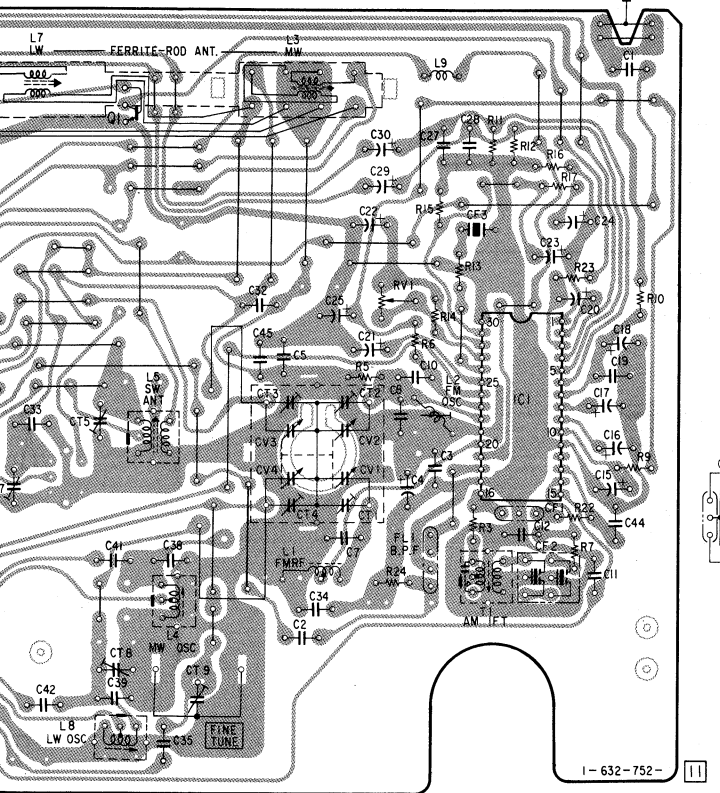
- : parts extracted from the component side.
- : Jumper wire connected to the ground pattern on the component side.

• Semiconductor Location

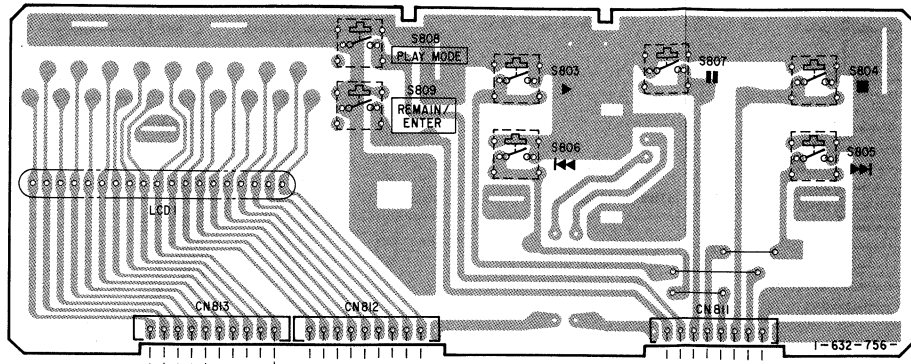
Ref. No.	Location	Ref. No.	Location
D11	E-8	Q1	A-9
D301	H-4	Q101	H-5
D303	H-4	Q102	I-5
D304	G-4	Q201	H-6
D305	J-9	Q202	I-6
D306	J-9	Q301	K-9
D307	K-8	Q302	J-9
D308	H-4	Q303	H-5
D309	J-7	Q304	H-4
D701	G-16	Q305	G-4
D702	G-16	Q306	G-4
D706	H-16	Q307	G-5
D707	H-16	Q308	G-5
D801	G-17	Q309	G-6
D802	G-17	Q701	F-20
D804	I-21	Q702	J-18
D805	I-20	Q703	I-18
D901	D-5	Q704	G-16
D902	D-5	Q705	J-18
D903	D-5	Q706	J-18
D904	E-5	Q711	H-16
		Q712	J-17
		Q713	I-17
IC1	C-11	Q714	I-18
IC301	G-7	Q791	F-20
IC302	H-3	Q792	F-20
IC701	E-20	Q801	G-15
IC702	G-20	Q802	G-16
IC703	F-18	Q803	E-18
IC704	F-18		
IC706	I-17		
IC707	G-18		
IC708	J-20		
IC709	I-19		
IC801	E-16		
IC802	J-21		
IC804	G-15		

• Circuit Boards Location

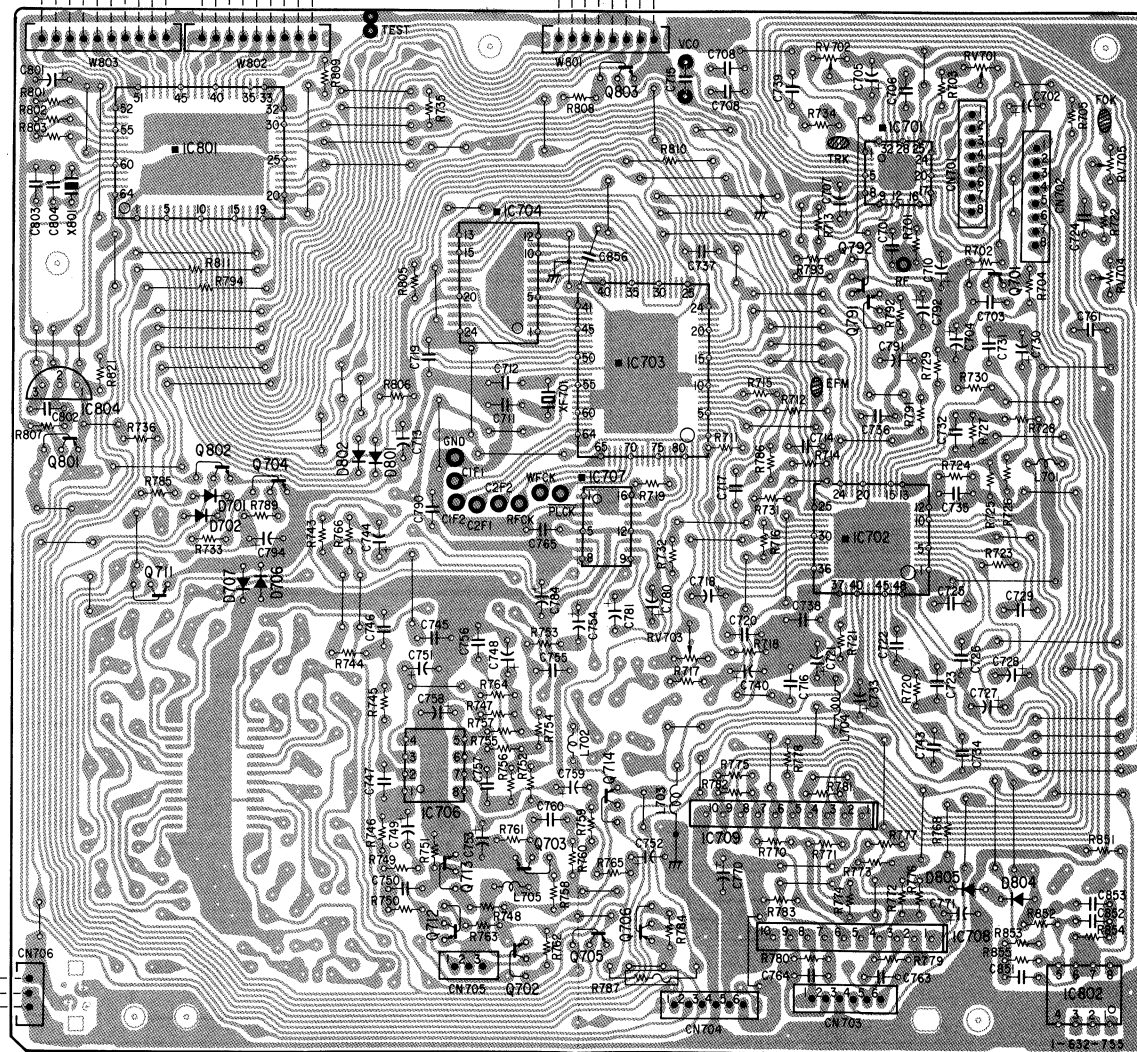




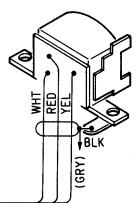
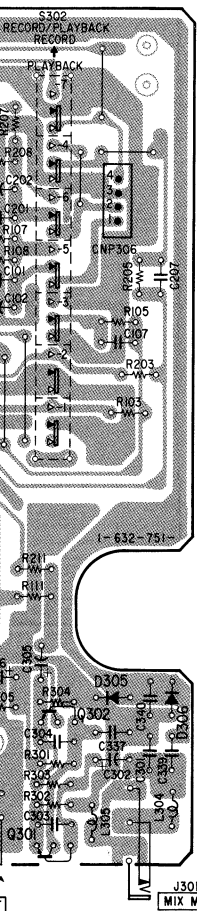
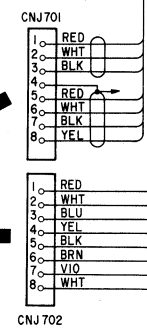
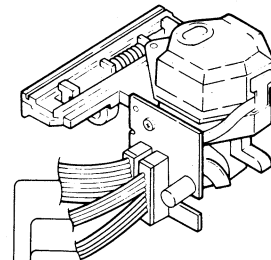
【CD CONTROL BOARD】(COMPONENT SIDE)



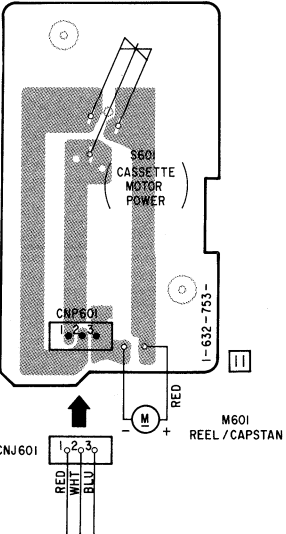
【CD MAIN BOARD】



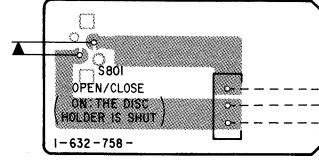
OPTICAL PICK-UP BLOCK (KSS-210B)



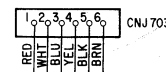
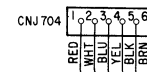
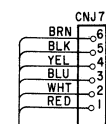
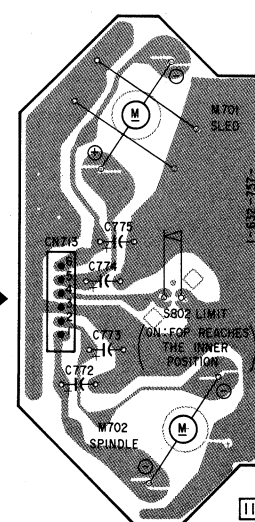
【MD BOARD】



【CD LEAF SW BOARD】



【CD MOTOR BOARD】





BA3312Q

CXP5024-092Q

2SB1013-4
2SC1815GR

BA6293

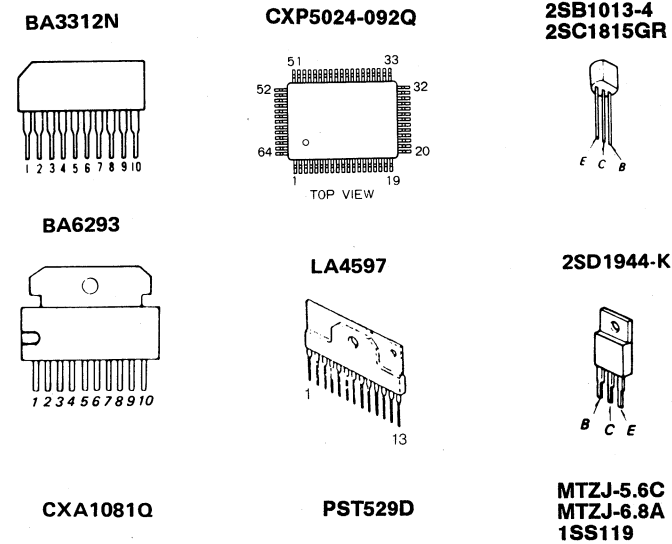
LA4597

2SD1944-K

CXA1081Q

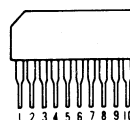
PST529D

MTZJ-5.6C
MTZJ-6.8A
1SS119

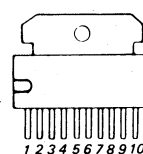


Semiconductor Lead Layouts

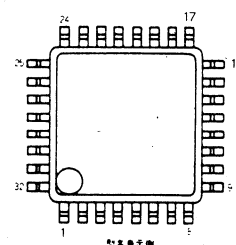
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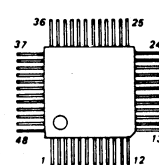
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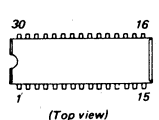
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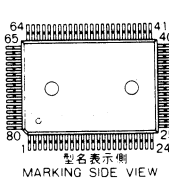
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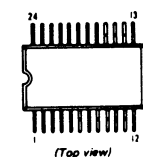
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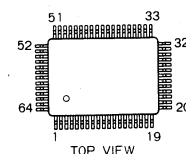
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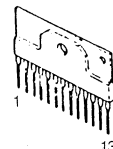
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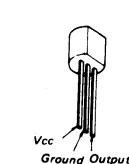
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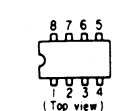
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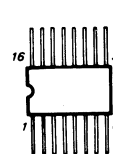
PST529D



RC4558P



μ PD6376



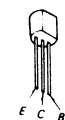
DTA124ES
DTC114YS
DTC124ES
DTC143ES
DTC143TS
DTC144ES
2SC1740S-QR



2SA1175HFE
2SC2785HFE



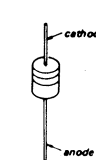
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2SC1815GR



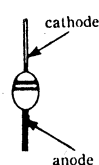
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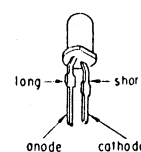
MTZJ-5.6C
MTZJ-6.8A
1SS119



U15G



GL-3PR9



H

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J

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M

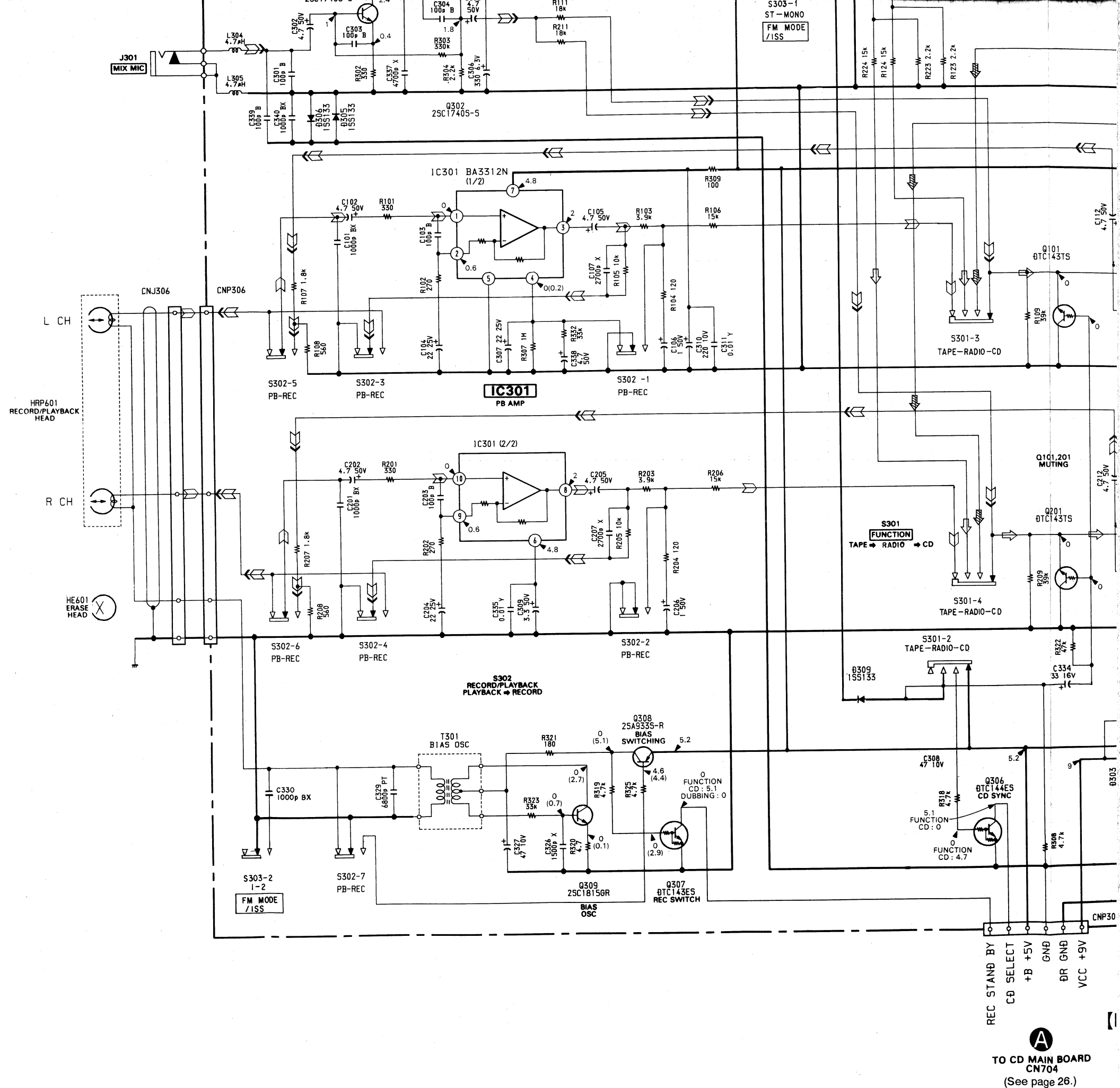
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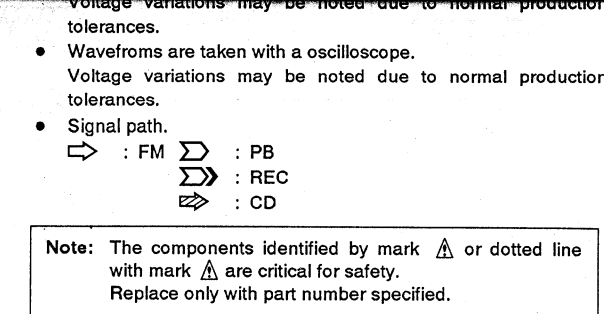
O

P

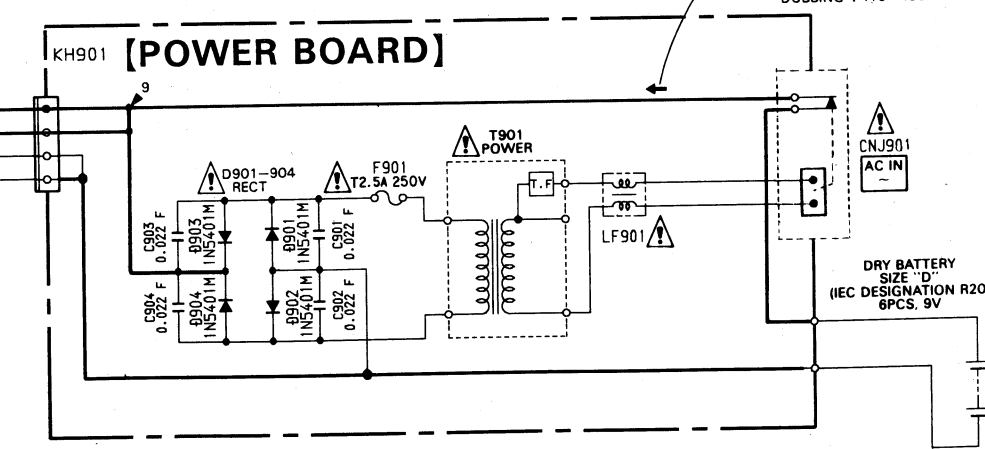
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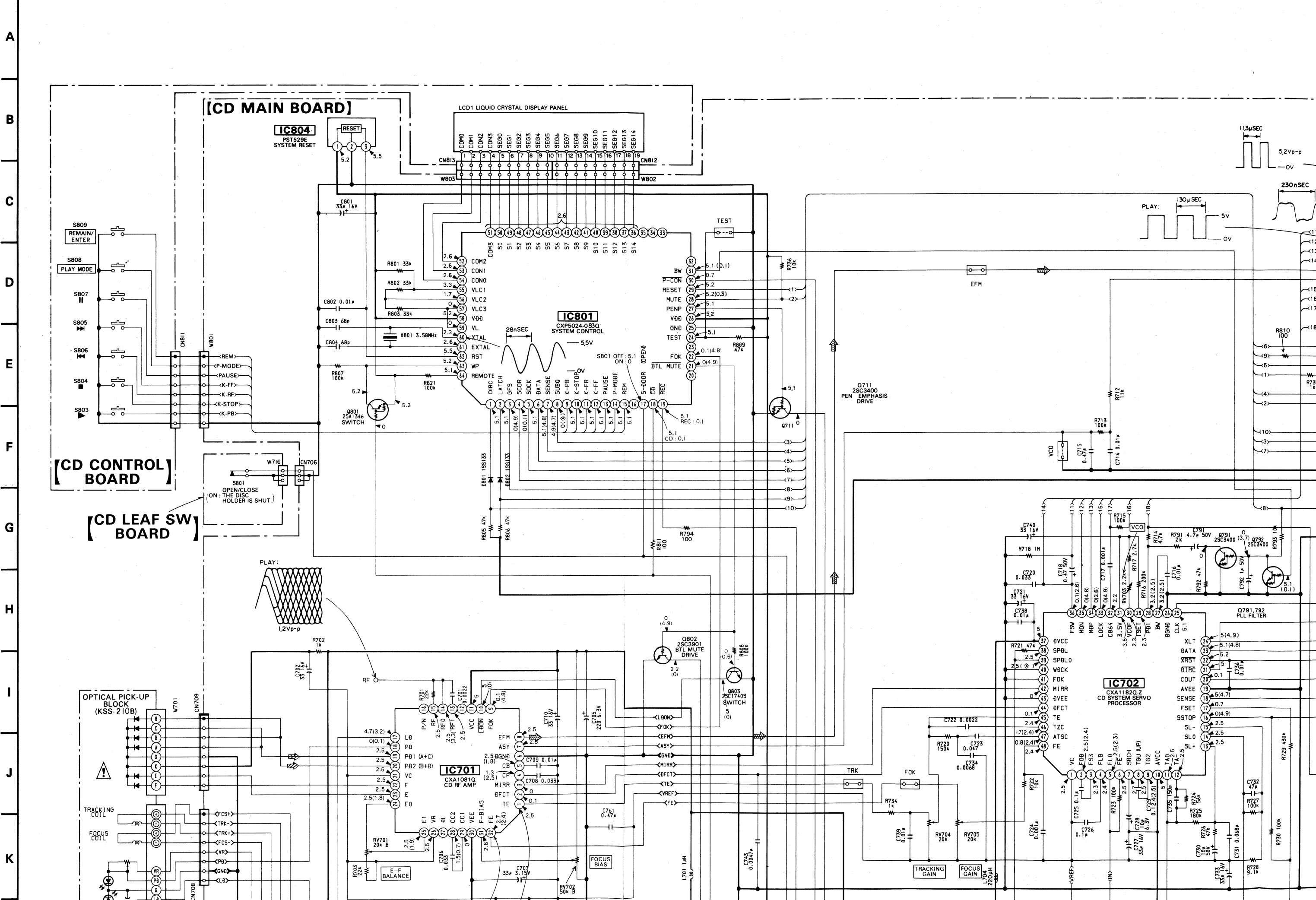
R

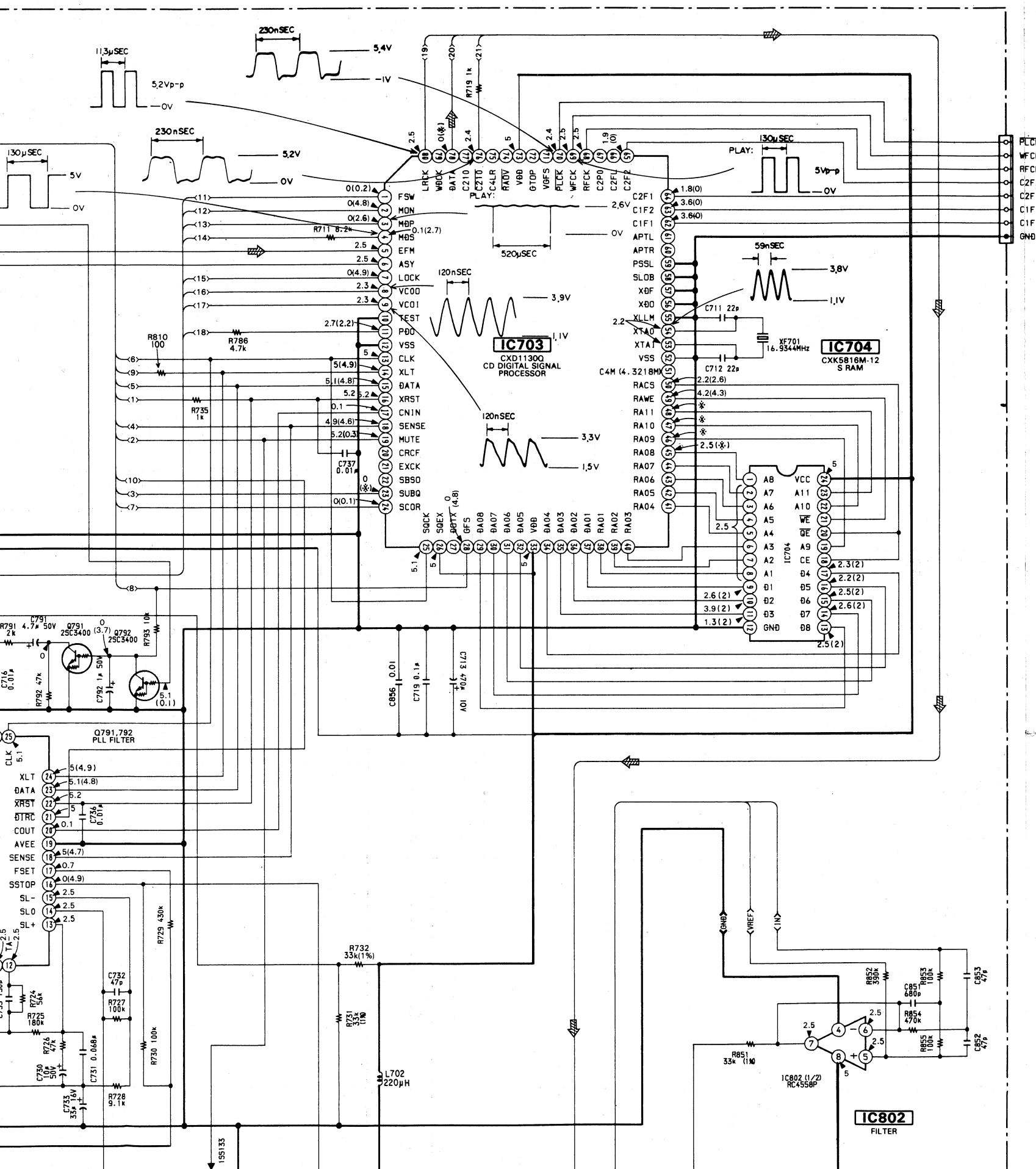




● TOTAL CURRENT
TAPE ▶ : 161mA
▶ ● : 179mA
RADIO ● : 120mA
AM : 116mA
CD ■ : 210mA
▶ : 340~380mA
DUBBING : 410~450mA

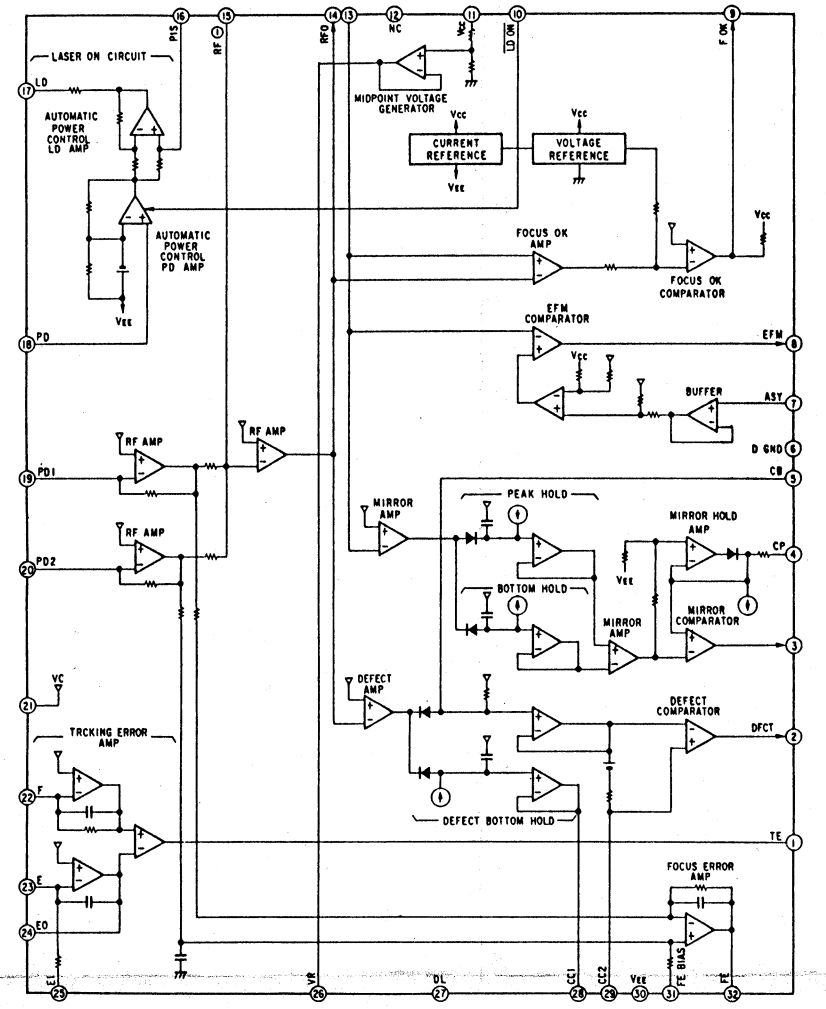




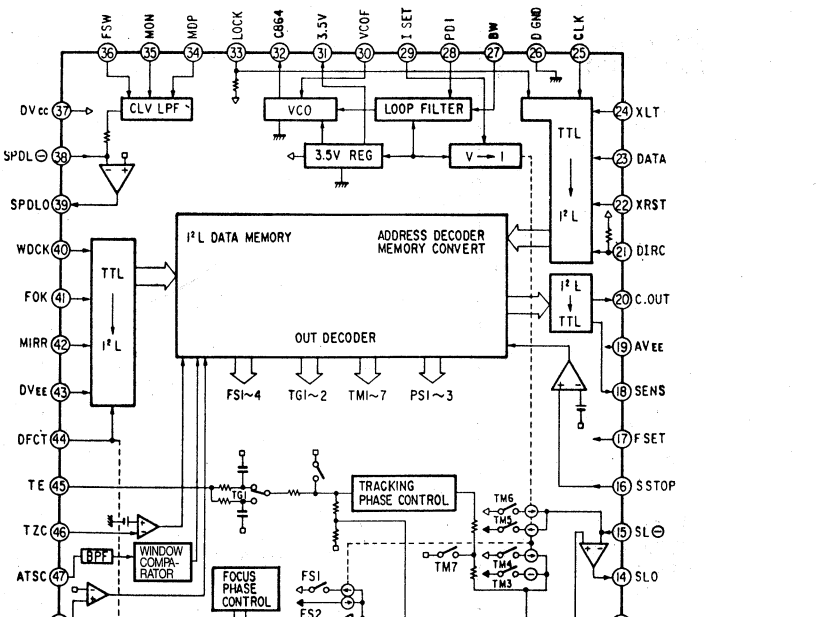


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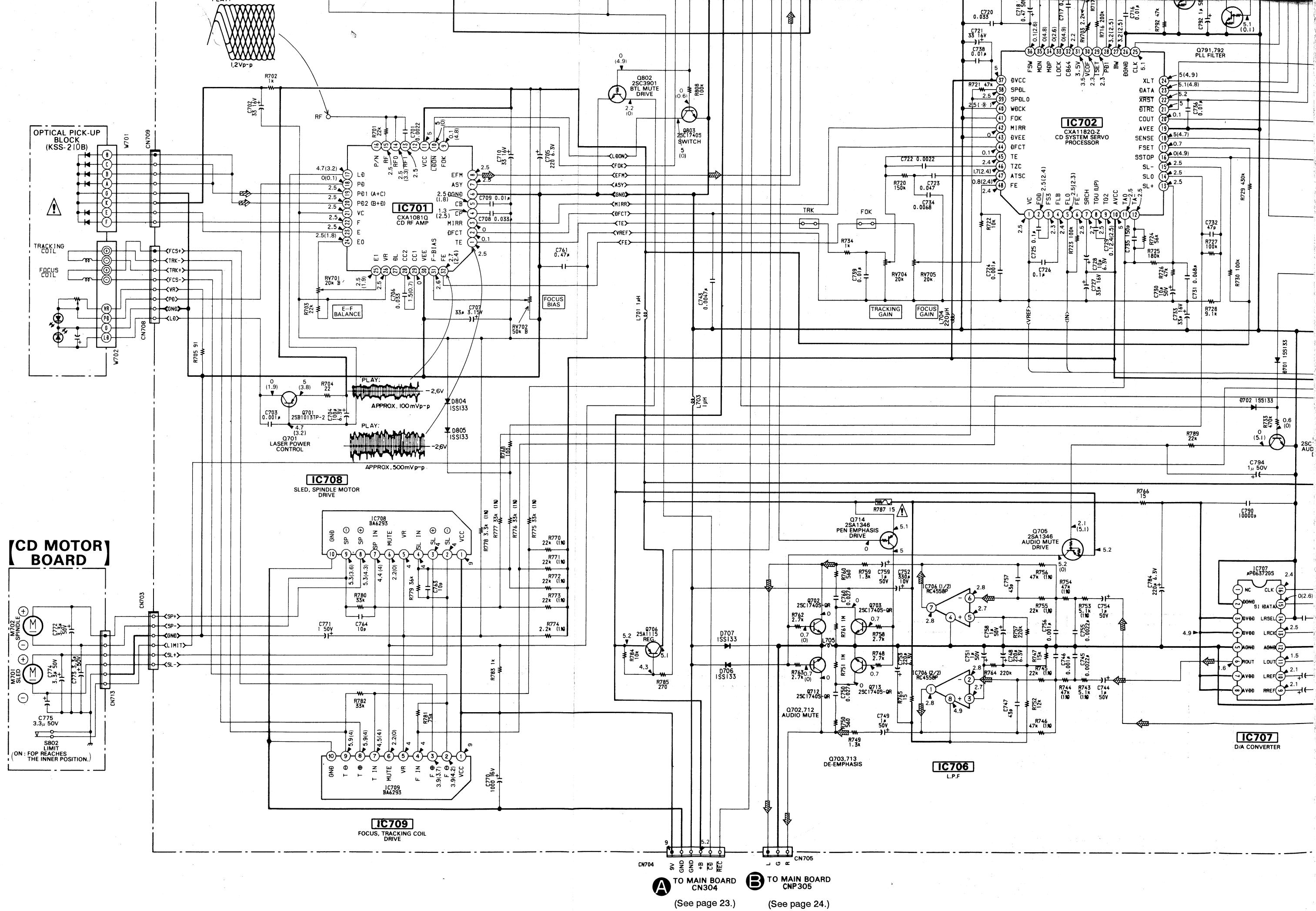
• IC Block Diagrams
IC701
CXA1081Q

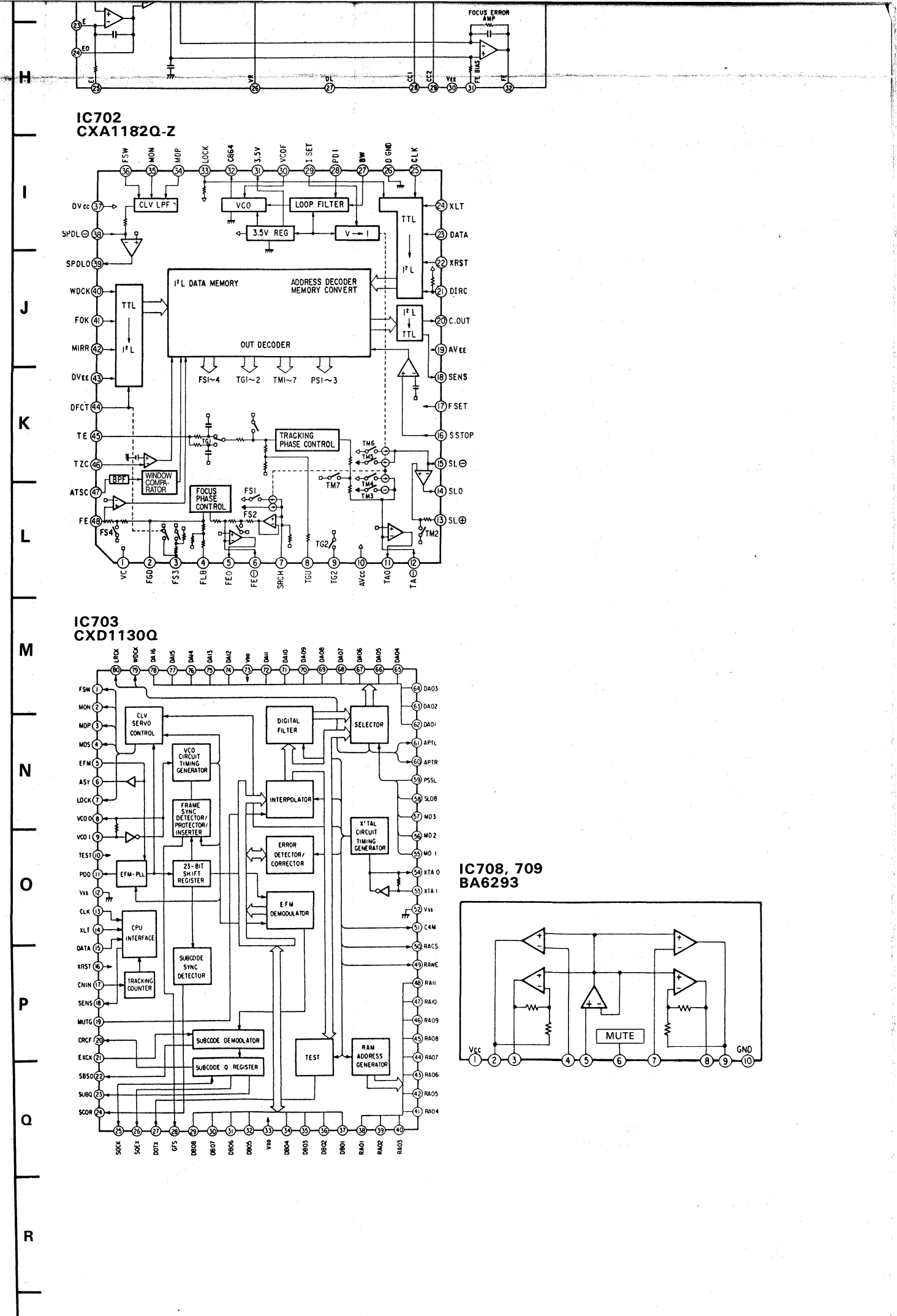
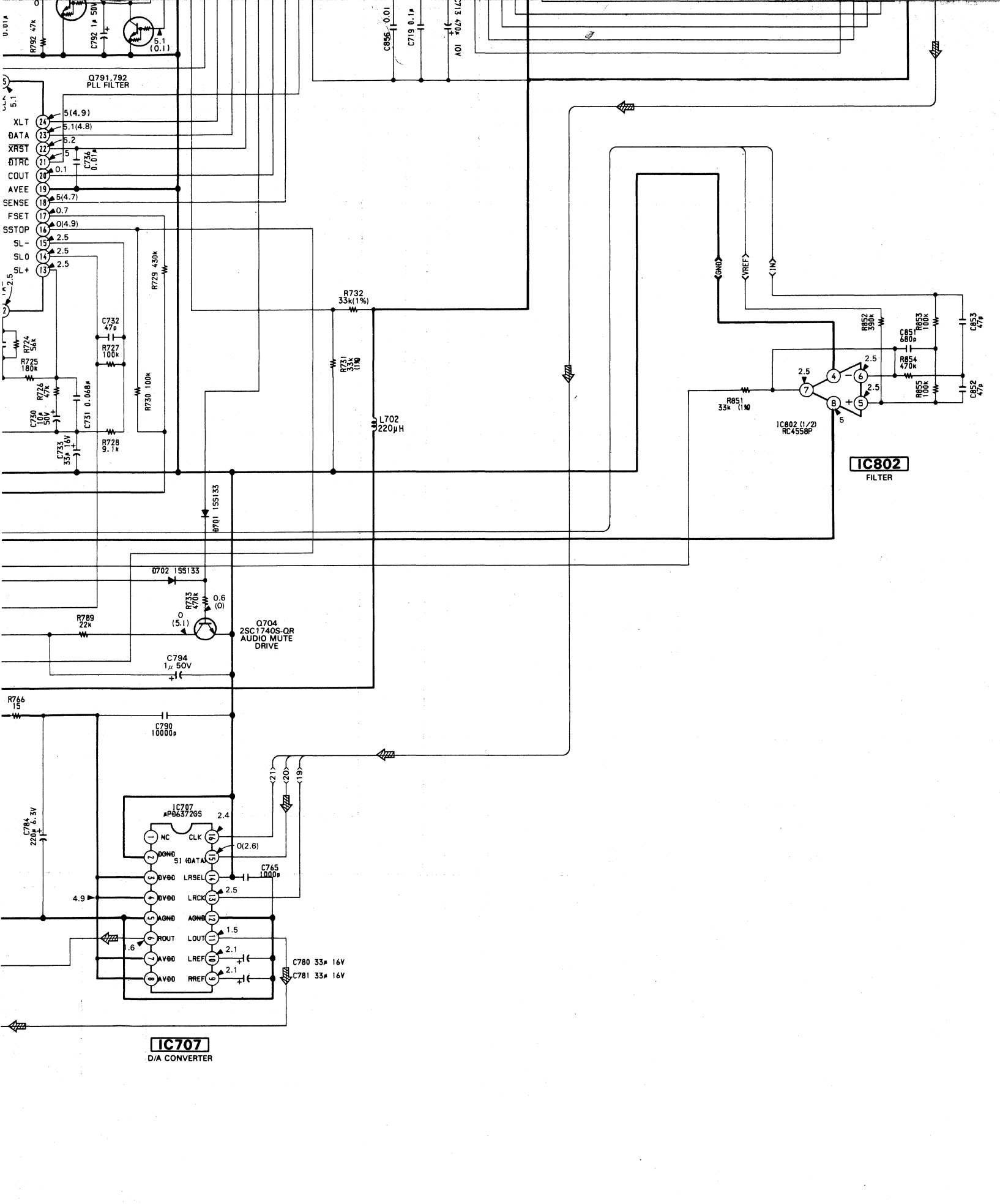


IC702
CXA1182Q-Z



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SECTION 7

EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.

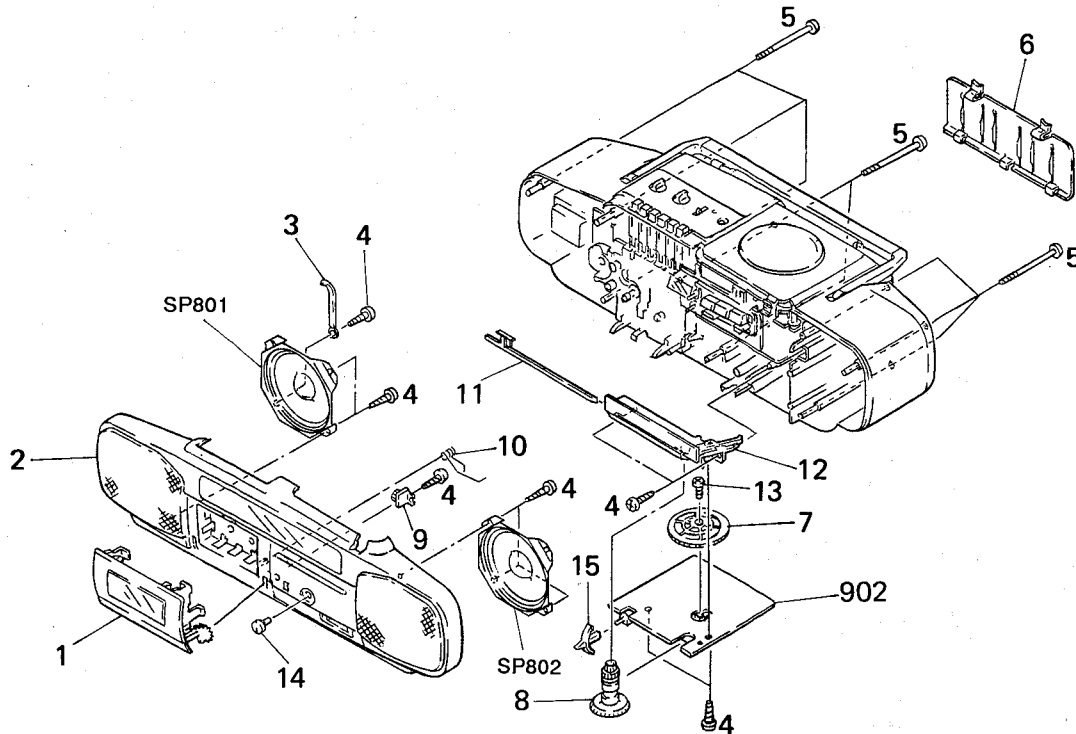
- Color Indication of Appearance Parts
Example:

(RED) ... KNOB, BALANCE (WHITE)

↑
Cabinet's Color↑
Parts' Color

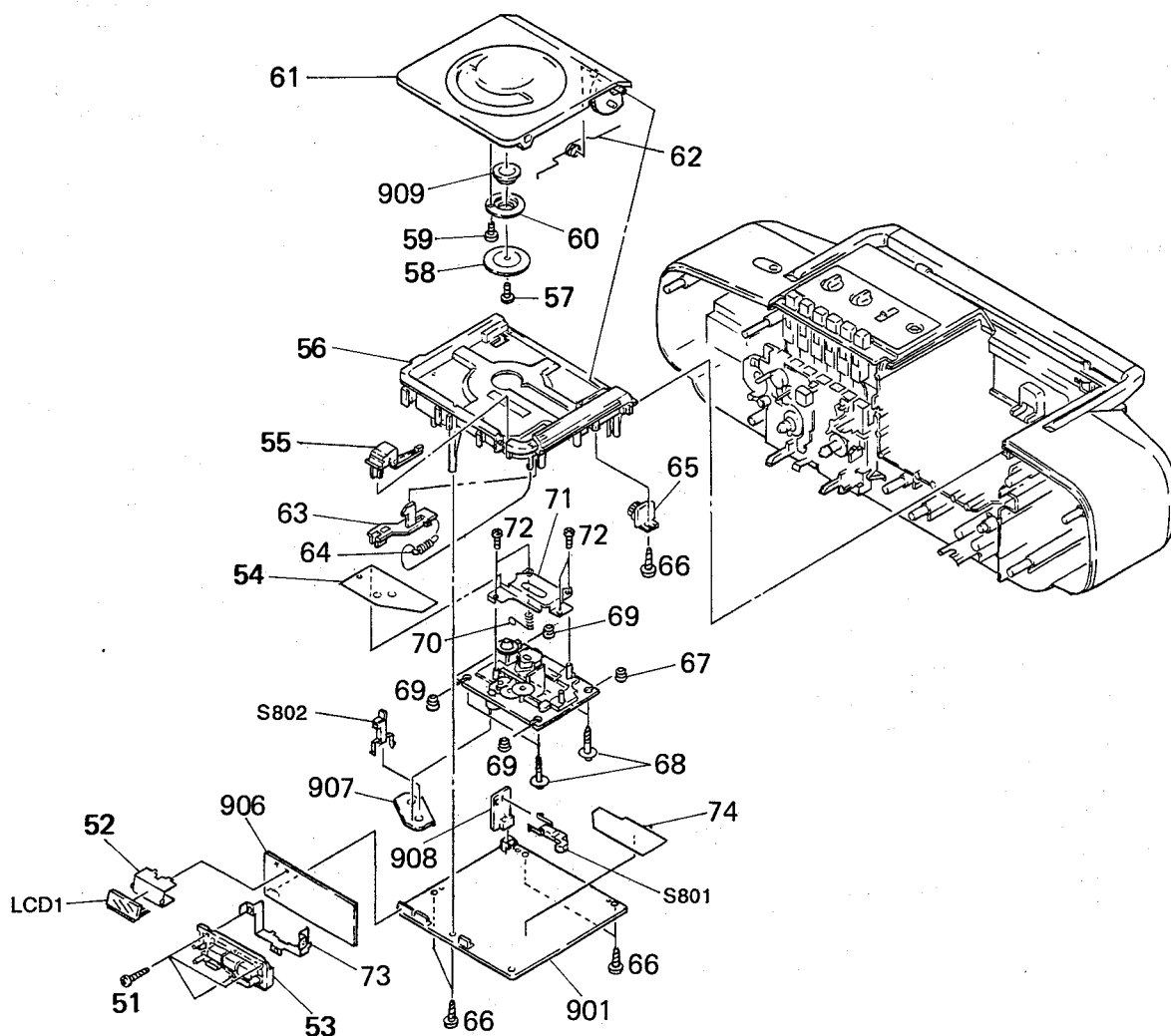
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

- WG: West Germany model
IT: Italian model

(1) FRONT PANEL AND TUNER BOARD SECTION

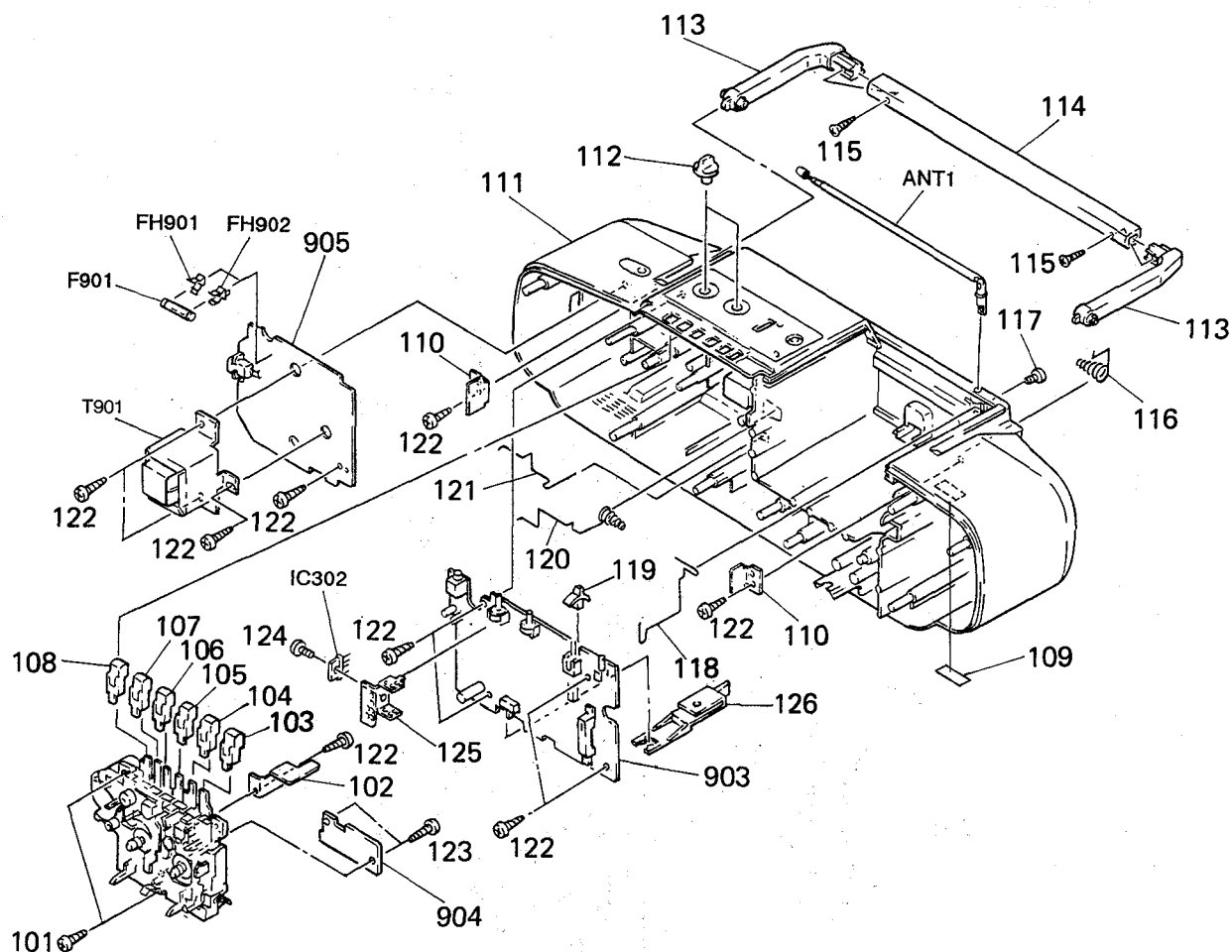
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	X-4936-001-1	CASSETTE HOLDER ASSY		11	4-936-011-01	POINTER	
2	X-4936-007-1	(IT).....FRONT CABINET ASSY		12	*4-936-009-01	CHASSIS, SUB	
	X-4936-008-1	(AEP,WG,UK)...FRONT CABINET ASSY		13	7-621-770-87	SCREW +P 2.6X5	
3	3-703-150-11	STOPPER, WIRING		14	4-936-035-01	KNOB (FINE TUNE)	
4	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3		15	3-343-062-31	KNOB (BAND)	
5	7-685-155-19	SCREW +BTP 3X40 TYPE2 N-S					
6	3-343-064-31	LID, BATTERY CASE		902	*A-3266-620-A	(AEP,WG,UK)...MOUNTED PCB, TUNER	
7	4-936-010-01	GEAR (PVC)			*A-3266-621-A	(IT).....MOUNTED PCB, TUNER	
8	4-936-012-01	KNOB (TUN)		SP801	1-544-154-11	SPEAKER	
9	3-351-377-11	DAMPER		SP802	1-544-154-11	SPEAKER	
10	3-343-067-01	SPRING (CASSETTE)					

(2) CD SECTION



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	7-621-770-XX	SCREW +PTT 2.6X8 (S)		67	4-922-858-01	DAMPER (BROWN)	
52	*4-936-022-01	BRACKET (LCD)		68	4-931-373-01	SCREW, CD FITTING	
53	4-936-029-01	BUTTON (CD)		69	4-922-858-11	DAMPER (BLUE)	
54	*4-931-787-01	COVER, DUST		70	4-931-358-01	SPRING	
55	4-936-019-01	BUTTON (EJECT)		71	*4-928-936-01	COVER, CD	
56	4-936-033-01	CABINET (CD)		72	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
57	7-621-772-10	SCREW +B 2X4		73	*4-936-039-01	BRACKET (BUTTON)	
58	3-704-435-01	PLATE (M), CHUCK		74	*4-930-246-11	PAPER (N), SHIELD	
59	7-685-646-79	SCREW +P 3X8 TYPE2 NON-SLIT		901	*A-3216-974-A	PC BOARD ASSY, MAIN, CD	
60	4-936-007-01	COVER		906	*1-632-756-11	PC BOARD, CD CONTROL	
61	X-4936-003-1	CD HOLDER ASSY		907	*1-632-757-11	PC BOARD, CD MOTOR	
62	4-936-028-01	SPRING (CD)		908	*1-632-758-11	PC BOARD, CD LEAF SW	
63	4-936-020-01	SLIDER		909	1-452-531-11	MAGNET	
64	4-936-038-01	SPRING (EJECT)		LCD1	1-808-930-11	DISPLAY PANEL, LIQUID CRYSTAL	
65	3-351-377-11	DAMPER		S801	1-571-274-11	SWITCH, LEAF (OPEN/CLOSE)	
66	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3		S802	1-571-274-11	SWITCH, LEAF (LIMIT)	

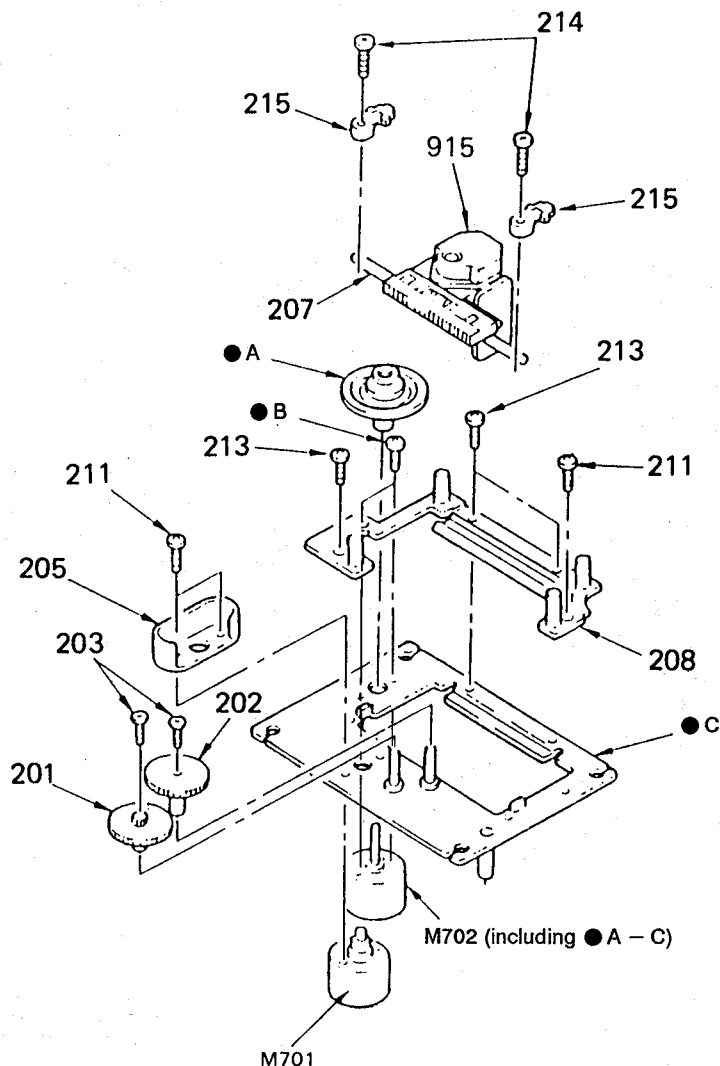
(3) REAR CABINET SECTION



Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

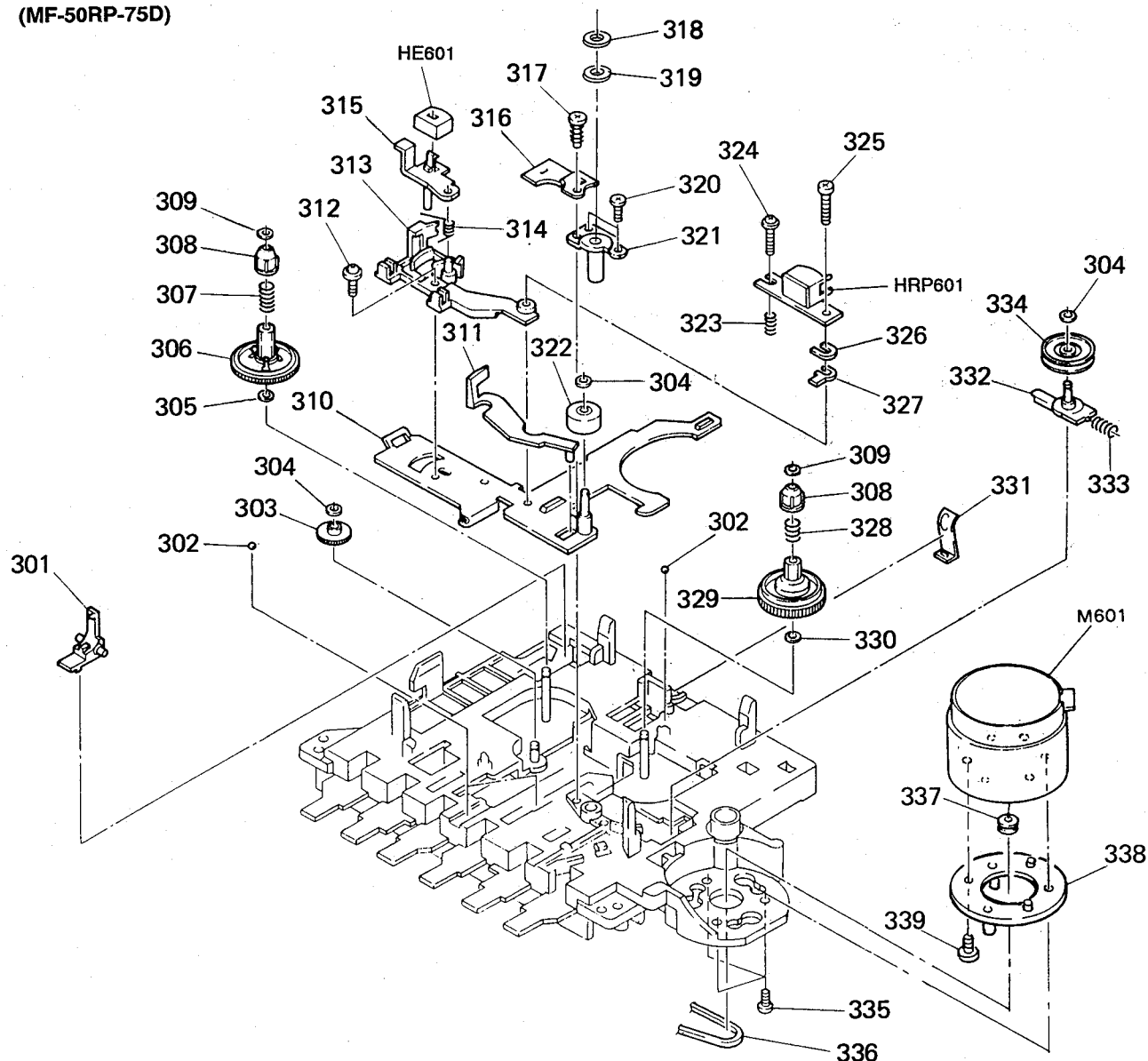
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	7-685-648-79	SCREW +BVT 3X12 TYPE2 IT-3		119	3-343-062-31	KNOB (FUNCTION)	
102	*4-936-021-01	LEVER, REC		120	4-936-024-01	SPRING (-)	
103	4-936-018-01	BUTTON (STOP)		121	4-936-023-01	TERMINAL (+), BATTERY	
104	4-936-017-01	BUTTON (REC)		122	7-621-773-86	SCREW +BVTT 2.6X4 (S)	
105	4-936-016-01	BUTTON (PLAY)		123	7-685-134-19	SCREW (+ PTPWH) (2.6X8)	
106	4-936-015-01	BUTTON (REW)		124	7-685-870-01	SCREW +BVTT 3X5 (S)	
107	4-936-014-01	BUTTON (FF)		125	*4-936-037-01	HEAT SINK	
108	4-936-013-01	BUTTON (PAUSE)		126	4-936-036-01	KNOB (ISS)	
109	*4-885-843-02	LABEL, CAUTION, LASER		903	*A-3270-731-A	MOUNTED PCB, AUDIO	
110	4-937-032-01	BRACKET		904	*1-632-753-11	PC BOARD, MD	
111	4-936-032-21	CABINET (REAR)		905	*1-632-754-11	PC BOARD, POWER	
112	3-351-338-31	KNOB (VOL)		ANT1	1-501-467-11	ANTENNA, TELESCOPIC	
113	4-936-008-01	PLATE, SIDE, HANDLE		F901	 1-532-286-00	FUSE, TIME-LAG, T2.5A 250V	
114	4-936-030-01	HANDLE		FH901	1-533-217-31	HOLDER, FUSE	
115	7-621-853-30	SCREW +KTP 3X12 TYPE4		FH902	1-533-217-31	HOLDER, FUSE	
116	3-343-070-01	SPRING (+, -)		IC302	8-759-820-22	IC LA4597	
117	7-682-549-09	SCREW +B 3X10		T901	 1-449-894-11	(UK).....TRANSFORMER, POWER	
118	4-936-025-01	TERMINAL, ANT		T901	 1-449-896-11	(AEP, WG, IT)...TRANSFORMER, POWER	

(4) OPTICAL PICK-UP BLOCK
(KSM-210BAN)



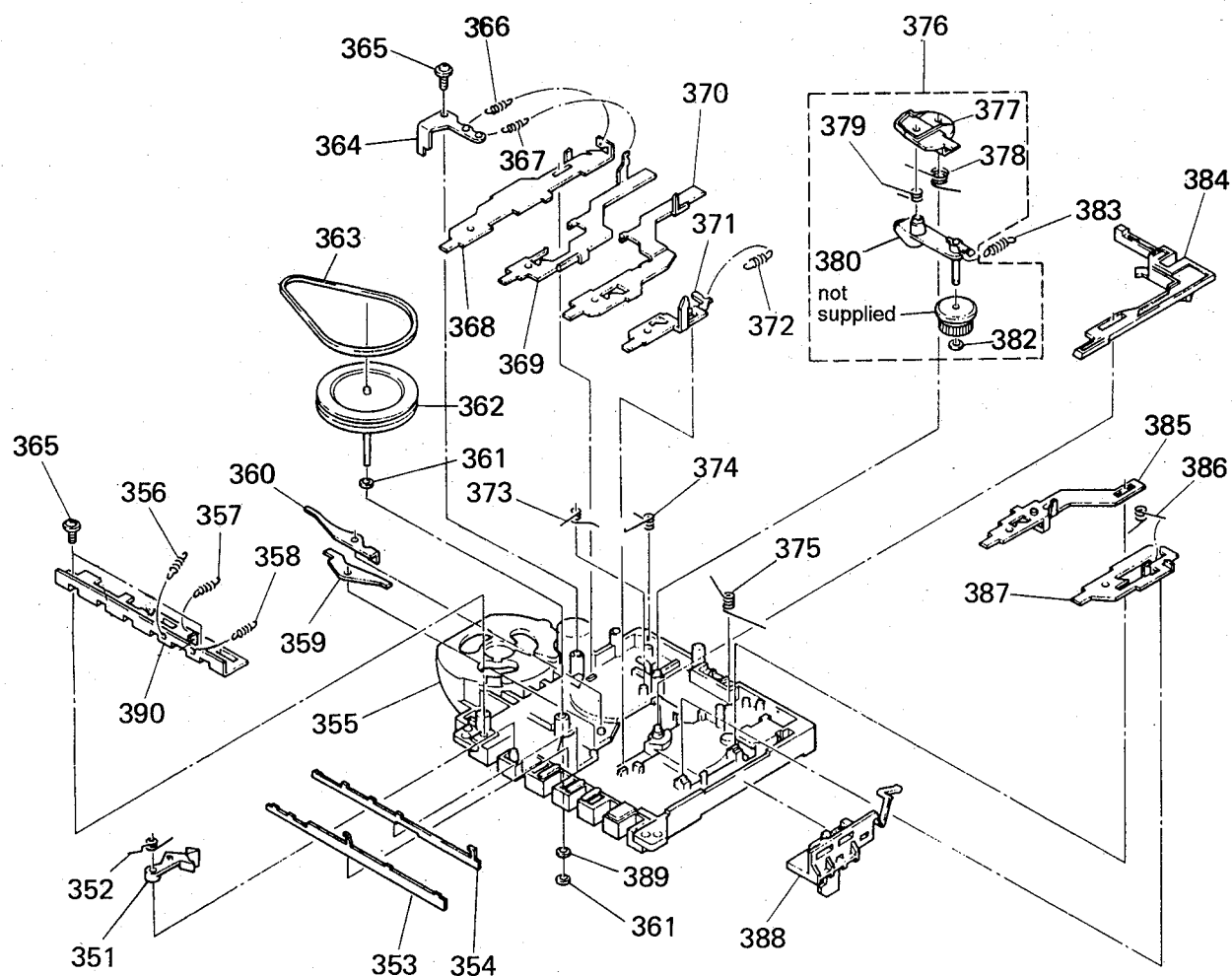
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
201	2-641-403-05	GEAR (B)		213	7-621-255-45	SCREW +PTT 2X6 (S)	
202	2-641-404-02	GEAR (A)		214	2-641-447-01	SCREW (2.6X8), + STP	
203	3-303-809-31	SCREW (M1.7X3.0), SPECIAL HEAD		215	2-641-448-02	CLAMP, SHAFT	
205	*2-641-434-01	COVER, GEAR		915	Δ.8-848-137-11	DEVICE, OPTICAL KSS-210B	
207	*4-910-431-01	SHAFT, SLIDE		M701	X-2641-357-1	MOTOR ASSY, SLED	
208	2-641-444-01	HOLDER (J), CHASSIS		M702	X-2641-341-1	MOTOR ASSY, SPINDLE (WITH CHASSIS, TURNTABLE)	
211	7-621-255-25	SCREW +P 2X4					

(5) TAPE TRANSPORT MECHANISM-1
(MF-50RP-75D)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
301	3-313-357-00	CLAW, REC PREVENTION		326	3-578-138-01	SHIM (t=0.1)	
302	7-671-112-11	BALL, STEEL			3-578-138-11	SHIM (t=0.2)	
303	3-558-620-11	GEAR, REWIND			3-578-138-21	SHIM (t=0.3)	
304	3-307-948-01	WASHER, NYLON		327	3-331-108-01	LUG (T), SHIM (t=0.1)	
305	3-322-659-01	WASHER (A)			3-331-108-11	LUG (T), SHIM (t=0.2)	
306	3-313-305-00	TABLE, REEL, SUPPLY			3-331-108-21	LUG (T), SHIM (t=0.3)	
307	3-313-344-00	SPRING, COMPRESSION			3-331-108-31	LUG (T), SHIM (t=0.4)	
308	3-313-333-00	CLAW, REEL			3-331-108-41	LUG (T), SHIM (t=0.5)	
309	3-558-708-01	WASHER, STOPPER		328	3-313-345-00	SPRING, COMPRESSION	
310	X-3313-311-1	CHASSIS ASSY		329	A-3130-031-A	TABLE ASSY, REEL, TAKE-UP	
311	3-313-316-00	LEVER, SHUT-OFF DETECTION		330	3-701-437-21	WASHER	
312	7-621-255-35	SCREW (2MMX5), + PWH		331	3-313-902-11	SPRING	
313	3-334-717-01	BRACKET (M), HEAD		332	X-3313-301-0	BRACKET ASSY, T PULLEY	
314	3-313-339-00	SPRING		333	3-573-464-00	SPRING, COMPRESSION	
315	*3-324-221-01	ARM (DC), ERASE HD		334	X-3313-307-0	PULLEY ASSY, FWD	
316	*3-332-309-01	SPRING (B)		335	7-621-775-60	SCREW, PAN	
317	7-685-134-19	SCREW (B2.6), TAPPING		336	3-313-335-00	BELT, CAPSTAN	
318	3-307-948-41	WASHER, NYLON		337	X-3313-308-1	PULLEY (C), MOTOR	
319	3-701-438-11	WASHER, 2.5		338	3-330-679-01	BRACKET (M), MOTOR	
320	3-318-203-71	SCREW (B1.7X5), TAPPING		339	7-621-773-86	SCREW +P 2.6X4	
321	X-3319-945-1	BEARING ASSY, CAPSTAN		HE601	1-543-525-11	HEAD, MAGNETIC (ERASE)	
322	3-703-597-41	PINCH ROLLER, STANDARD		HRP601	1-543-319-11	HEAD, MAGNETIC (REC/PB)	
323	3-313-340-00	SPRING, COMPRESSION		M601	1-541-625-11	MOTOR, DC	
324	7-621-255-55	SCREW, LOCK					
325	7-621-772-40	SCREW +B 2X8					

(6) TAPE TRANSPORT MECHANISM-2
(MF-50RP-75D)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
351	3-313-322-02	LEVER (A), S.OFF		371	*3-313-326-00	LEVER, FWD BUTTON	
352	3-313-323-00	SPRING		372	3-324-222-01	SPRING (HIGH TENSION), TENSION	
353	*3-313-351-16	PLATE (A), LOCK		373	3-313-338-00	SPRING	
354	*3-313-352-11	PLATE (B), LOCK		374	3-313-378-01	SPRING (A)	
355	A-3102-092-A	CHASSIS ASSY, MECHANICAL		375	3-313-327-00	SPRING	
356	3-313-369-00	SPRING, TENSION		376	A-3136-041-B	IDLER COMPLETE ASSY, FR	377-380, 382
357	3-313-343-00	SPRING, TENSION		377	3-313-314-00	LEVER (SI), FR	
358	3-322-691-01	SPRING, TENSION		378	3-313-315-00	SPRING	
359	*3-313-321-00	LEVER, PREVENTION, RFR		379	3-313-313-00	SPRING	
360	*3-313-320-00	LEVER, RCP		380	X-3313-304-0	ARM ASSY, REW	
361	3-701-438-11	WASHER, 2.5		382	3-558-708-01	WASHER, STOPPER	
362	X-3313-315-1	FLYWHEEL (G) ASSY		383	3-313-365-00	SPRING, TENSION	
363	3-313-335-00	BELT, CAPSTAN		384	3-313-356-00	BRAKE	
364	3-356-111-01	HOOK, SPRING		385	*3-313-350-00	LEVER, REC BUTTON	
365	7-687-233-11	SCREW (+ PTPWH) (2.6X6)		386	3-313-331-00	SPRING	
366	3-313-349-00	SPRING, TENSION		387	*3-313-325-00	LEVER, STOP BUTTON	
367	3-313-348-00	SPRING, TENSION		388	3-313-380-01	CLAW (A), EJECT	
368	*3-313-381-01	LEVER (B), PAUSE BUTTON		389	3-701-438-01	WASHER	
369	*3-313-353-00	LEVER, FF BUTTON					
370	*3-313-354-00	LEVER, REW BUTTON					

SECTION 8

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μ F, PF: μ F.

RESISTORS
• All resistors are in ohms.
• F: nonflammable

COILS
• MMH: mH, UH: μ H

SEMICONDUCTORS
In each case, U: μ , for example:
UA....: μ A...., UPA....: μ PA....,
UPC....: μ PC, UPD....: μ PD....

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

• WG: West Germany model
IT: Italian model

Ref.No.	Part No.	Description
901	*A-3216-974-A	PC BOARD ASSY, MAIN, CD
902	*A-3266-620-A	(AEP,WG,UK)...MOUNTED PCB, TUNER
	*A-3266-621-A	(IT).....MOUNTED PCB, TUNER
903	*A-3270-731-A	MOUNTED PCB, AUDIO
904	*1-632-753-11	PC BOARD, MD
905	*1-632-754-11	PC BOARD, POWER
906	*1-632-756-11	PC BOARD, CD CONTROL
907	*1-632-757-11	PC BOARD, CD MOTOR
908	*1-632-758-11	PC BOARD, CD LEAF SW
909	1-452-531-11	MAGNET
915	Δ 8-848-137-11	DEVICE, OPTICAL KSS-210B
ANT1	1-501-467-11	ANTENNA, TELESCOPIC
C1	1-162-286-31	CERAMIC 220PF 10% 50V
C2	1-162-286-31	CERAMIC 220PF 10% 50V
C3	1-164-096-11	CERAMIC 0.01MF 50V
C4	1-123-875-11	ELECT 10MF 20% 50V
C5	1-164-096-11	CERAMIC 0.01MF 50V
C7	1-164-056-11	CERAMIC 27PF 5% 50V
C8	1-102-961-00	CERAMIC 27PF 5% 50V
C10	1-164-012-11	CERAMIC 3PF 0.25PF 50V
C11	1-164-096-11	CERAMIC 0.01MF 50V
C12	1-162-282-31	CERAMIC 100PF 10% 50V
C15	1-124-927-11	ELECT 4.7MF 20% 50V
C16	1-124-791-11	ELECT 1MF 20% 50V
C17	1-124-446-11	ELECT 47MF 20% 10V
C18	1-124-446-11	ELECT 47MF 20% 10V
C19	1-164-096-11	CERAMIC 0.01MF 50V
C20	1-124-791-11	ELECT 1MF 20% 50V
C21	1-124-925-11	ELECT 2.2MF 20% 50V
C22	1-124-443-00	ELECT 100MF 20% 10V
C23	1-124-902-00	ELECT 0.47MF 20% 50V
C24	1-124-927-11	ELECT 4.7MF 20% 50V
C25	1-124-463-00	ELECT 0.1MF 20% 50V
C27	1-161-053-00	CERAMIC 0.015MF 10% 16V
C28	1-161-053-00	CERAMIC 0.015MF 10% 16V
C29	1-124-463-00	ELECT 0.1MF 20% 50V
C30	1-124-463-00	ELECT 0.1MF 20% 50V
C32	1-102-945-00	(AEP,WG,UK)...CERAMIC 8PF 0.5PF 50V
C32	1-102-947-00	(IT).....CERAMIC 10PF 0.5PF 50V
C33	1-164-060-11	CERAMIC 39PF 5% 50V
C34	1-164-096-11	CERAMIC 0.01MF 50V
C35	1-164-046-11	CERAMIC 10PF 0.5PF 50V
C36	1-102-998-11	CERAMIC 5PF 0.5PF 50V

Ref.No.	Part No.	Description
C38	1-102-960-00	(AEP,WG,UK)...CERAMIC 24PF 5% 50V
C38	1-102-961-00	(IT).....CERAMIC 27PF 5% 50V
C39	1-136-010-00	(IT).....FILM 200PF 5% 50V
C39	1-136-982-11	(AEP,WG,UK)...FILM 220PF 5% 63V
C40	1-136-307-11	FILM 0.0043MF 5% 50V
C41	1-136-988-11	FILM 390PF 5% 63V
C42	1-136-984-11	FILM 270PF 5% 63V
C44	1-162-282-31	CERAMIC 100PF 10% 50V
C45	1-162-282-31	CERAMIC 100PF 10% 50V
C46	1-162-282-31	CERAMIC 100PF 10% 50V
C47	1-162-282-31	CERAMIC 100PF 10% 50V
C101	1-162-294-31	CERAMIC 0.001MF 10% 50V
C102	1-124-927-11	ELECT 4.7MF 20% 50V
C103	1-162-282-31	CERAMIC 100PF 10% 50V
C104	1-126-233-11	ELECT 22MF 20% 25V
C105	1-124-927-11	ELECT 4.7MF 20% 50V
C106	1-124-791-11	ELECT 1MF 20% 50V
C107	1-162-832-11	CERAMIC 0.0027MF 10% 16V
C108	1-124-927-11	ELECT 4.7MF 20% 50V
C109	1-162-282-31	CERAMIC 100PF 10% 50V
C110	1-124-927-11	ELECT 4.7MF 20% 50V
C111	1-162-847-11	CERAMIC 0.047MF 10% 16V
C112	1-124-927-11	ELECT 4.7MF 20% 50V
C113	1-162-292-31	CERAMIC 680PF 10% 50V
C114	1-162-282-31	CERAMIC 100PF 10% 50V
C115	1-124-446-11	ELECT 47MF 20% 10V
C117	1-124-443-00	ELECT 100MF 20% 10V
C118	1-130-495-00	MYLAR 0.1MF 5% 50V
C119	1-124-473-11	ELECT 1000MF 20% 10V
C124	1-162-294-31	CERAMIC 0.001MF 10% 50V
C201	1-162-294-31	CERAMIC 0.001MF 10% 50V
C202	1-124-927-11	ELECT 4.7MF 20% 50V
C203	1-162-282-31	CERAMIC 100PF 10% 50V
C204	1-126-233-11	ELECT 22MF 20% 25V
C205	1-124-927-11	ELECT 4.7MF 20% 50V
C206	1-124-791-11	ELECT 1MF 20% 50V
C207	1-162-832-11	CERAMIC 0.0027MF 10% 16V
C208	1-124-927-11	ELECT 4.7MF 20% 50V
C209	1-162-282-31	CERAMIC 100PF 10% 50V
C210	1-124-927-11	ELECT 4.7MF 20% 50V
C211	1-162-847-11	CERAMIC 0.047MF 10% 16V
C212	1-124-927-11	ELECT 4.7MF 20% 50V
C213	1-162-292-31	CERAMIC 680PF 10% 50V
C214	1-162-282-31	CERAMIC 100PF 10% 50V
C215	1-124-446-11	ELECT 47MF 20% 10V
C217	1-124-443-00	ELECT 100MF 20% 10V

Ref.No.	Part No.	Description
C218	1-130-495-00	MYLAR 0.1MF 5% 50V
C219	1-124-473-11	ELECT 1000MF 20% 10V
C224	1-162-294-31	CERAMIC 0.001MF 10% 50V
C301	1-162-282-31	CERAMIC 100PF 10% 50V
C302	1-124-927-11	ELECT 4.7MF 20% 50V
C303	1-162-282-31	CERAMIC 100PF 10% 50V
C304	1-162-282-31	CERAMIC 100PF 10% 50V
C305	1-124-927-11	ELECT 4.7MF 20% 50V
C306	1-124-442-00	ELECT 330MF 20% 6.3V
C307	1-126-233-11	ELECT 22MF 20% 25V
C309	1-123-382-00	ELECT 3.3MF 20% 50V
C310	1-126-176-11	ELECT 220MF 20% 10V
C311	1-161-379-00	CERAMIC 0.01MF 30% 16V
C312	1-126-176-11	ELECT 220MF 20% 10V
C313	1-124-119-00	ELECT 330MF 20% 16V
C317	1-161-379-00	CERAMIC 0.01MF 30% 16V
C318	1-161-379-00	CERAMIC 0.01MF 30% 16V
C320	1-126-176-11	ELECT 220MF 20% 10V
C321	1-126-176-11	ELECT 220MF 20% 10V
C326	1-161-374-11	CERAMIC 0.0015MF 30% 16V
C327	1-124-446-11	ELECT 47MF 20% 10V
C329	1-130-481-00	MYLAR 0.0068MF 5% 50V
C330	1-162-294-31	CERAMIC 0.001MF 10% 50V
C331	1-161-379-00	CERAMIC 0.01MF 30% 16V
C332	1-126-017-11	ELECT 6800MF 20% 16V
C334	1-124-963-11	ELECT 33MF 20% 16V
C335	1-161-379-00	CERAMIC 0.01MF 30% 16V
C336	1-124-446-11	ELECT 47MF 20% 10V
C337	1-161-377-00	CERAMIC 0.0047MF 20% 16V
C338	1-124-927-11	ELECT 4.7MF 20% 50V
C339	1-162-282-31	CERAMIC 100PF 10% 50V
C340	1-162-294-31	CERAMIC 0.001MF 10% 50V
C701	1-130-475-00	MYLAR 0.0022MF 5% 50V
C702	1-124-963-11	ELECT 33MF 20% 16V
C703	1-162-294-31	CERAMIC 0.001MF 10% 50V
C704	1-124-443-00	ELECT 100MF 20% 6.3V
C705	1-126-176-11	ELECT 220MF 20% 6.3V
C706	1-130-489-00	MYLAR 0.033MF 5% 50V
C707	1-131-386-00	TANTALUM 33MF 10% 3.15V
C708	1-130-489-00	MYLAR 0.033MF 5% 50V
C709	1-130-483-00	MYLAR 0.01MF 5% 50V
C710	1-124-963-11	ELECT 33MF 20% 16V
C711	1-162-207-31	CERAMIC 22PF 5% 50V
C712	1-162-207-31	CERAMIC 22PF 5% 50V
C713	1-124-472-11	ELECT 470MF 20% 10V
C714	1-161-379-00	CERAMIC 0.01MF 30% 16V
C715	1-136-173-00	FILM 0.47MF 5% 50V
C716	1-130-483-00	MYLAR 0.01MF 5% 50V
C717	1-162-294-31	CERAMIC 0.001MF 10% 50V
C718	1-124-902-00	ELECT 0.47MF 20% 50V
C719	1-162-851-11	CERAMIC 0.1MF 16V
C720	1-130-489-00	MYLAR 0.033MF 5% 50V
C721	1-124-963-11	ELECT 33MF 20% 16V
C722	1-130-475-00	MYLAR 0.0022MF 5% 50V
C723	1-162-847-11	CERAMIC 0.047MF 10% 16V
C724	1-162-294-31	CERAMIC 0.001MF 10% 50V
C725	1-136-165-00	FILM 0.1MF 5% 50V

Ref.No.	Part No.	Description
C726	1-136-165-00	FILM 0.1MF 5% 50V
C727	1-124-963-11	ELECT 33MF 20% 16V
C728	1-131-377-00	TANTALUM 10MF 10% 6.3V
C729	1-136-165-00	FILM 0.1MF 5% 50V
C730	1-123-875-11	ELECT 10MF 20% 50V
C731	1-162-849-11	CERAMIC 0.068MF 10% 16V
C732	1-162-215-31	CERAMIC 47PF 5% 50V
C733	1-124-963-11	ELECT 33MF 20% 16V
C734	1-130-481-00	MYLAR 0.0068MF 5% 50V
C735	1-162-284-31	CERAMIC 150PF 10% 50V
C736	1-161-379-00	CERAMIC 0.01MF 30% 16V
C737	1-161-379-00	CERAMIC 0.01MF 30% 16V
C738	1-161-379-00	CERAMIC 0.01MF 30% 16V
C739	1-161-379-00	CERAMIC 0.01MF 30% 16V
C740	1-124-963-11	ELECT 33MF 20% 16V
C743	1-130-479-00	MYLAR 0.0047MF 5% 50V
C744	1-124-791-11	ELECT 1MF 20% 50V
C745	1-130-475-00	MYLAR 0.0022MF 5% 50V
C746	1-130-471-00	MYLAR 0.001MF 5% 50V
C747	1-102-966-00	CERAMIC 43PF 5% 50V
C748	1-126-176-11	ELECT 220MF 20% 6.3V
C749	1-124-791-11	ELECT 1MF 20% 50V
C750	1-130-488-00	MYLAR 0.027MF 5% 50V
C751	1-124-791-11	ELECT 1MF 20% 50V
C752	1-124-604-00	ELECT 330MF 20% 10V
C753	1-126-176-11	ELECT 220MF 20% 6.3V
C754	1-124-438-00	ELECT 1MF 20% 50V
C755	1-130-475-00	MYLAR 0.0022MF 5% 50V
C756	1-130-471-00	MYLAR 0.001MF 5% 50V
C757	1-102-966-00	CERAMIC 43PF 5% 50V
C758	1-124-791-11	ELECT 1MF 20% 50V
C759	1-124-791-11	ELECT 1MF 20% 50V
C760	1-130-488-00	MYLAR 0.027MF 5% 50V
C761	1-136-173-00	FILM 0.47MF 5% 50V
C763	1-162-199-31	CERAMIC 10PF 5% 50V
C764	1-162-199-31	CERAMIC 10PF 5% 50V
C765	1-162-294-31	CERAMIC 0.001MF 10% 50V
C770	1-124-360-00	ELECT 1000MF 20% 16V
C771	1-124-791-11	ELECT 1MF 20% 50V
C772	1-123-382-00	ELECT 3.3MF 20% 50V
C773	1-123-382-00	ELECT 3.3MF 20% 50V
C774	1-123-382-00	ELECT 3.3MF 20% 50V
C775	1-123-382-00	ELECT 3.3MF 20% 50V
C780	1-124-963-11	ELECT 33MF 20% 16V
C781	1-124-963-11	ELECT 33MF 20% 16V
C784	1-126-176-11	ELECT 220MF 20% 6.3V
C790	1-161-379-00	CERAMIC 0.01MF 30% 16V
C791	1-124-927-11	ELECT 4.7MF 20% 50V
C792	1-124-791-11	ELECT 1MF 20% 50V
C794	1-124-791-11	ELECT 1MF 20% 50V
C801	1-124-963-11	ELECT 33MF 20% 16V
C802	1-161-379-00	CERAMIC 0.01MF 30% 16V
C803	1-162-219-31	CERAMIC 68PF 5% 50V
C804	1-162-219-31	CERAMIC 68PF 5% 50V
C851	1-162-292-31	CERAMIC 680PF 10% 50V
C852	1-162-215-31	CERAMIC 47PF 5% 50V
C853	1-162-215-31	CERAMIC 47PF 5% 50V

Ref.No.	Part No.	Description
C856	1-101-004-00	CERAMIC 0.01MF 50V
C901	1-101-005-00	CERAMIC 0.022MF 50V
C902	1-101-005-00	CERAMIC 0.022MF 50V
C903	1-101-005-00	CERAMIC 0.022MF 50V
C904	1-101-005-00	CERAMIC 0.022MF 50V
CF1 CF3	1-567-166-00	FILTER, CERAMIC
CF2	1-567-670-11	FILTER, CERAMIC
CN701	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P
CN702	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P
CN703	*1-506-988-11	PIN, CONNECTOR (PC BOARD) 6P
CN704	*1-506-988-11	PIN, CONNECTOR (PC BOARD) 6P
CN705	*1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P
CN706	*1-562-477-11	CONNECTOR (SOCKET) 3P
CN711	*1-562-650-11	SOCKET, CONNECTOR 8P
CN713	*1-566-003-11	PIN, CONNECTOR (PC BOARD) 6P
CN811	*1-566-970-11	HOUSING, CONNECTOR (PC BOARD) 8P
CN812	*1-565-980-11	HOUSING, CONNECTOR (PC BOARD) 9P
CN813	*1-568-451-11	HOUSING, CONNECTOR (PC BOARD) 10P
△CNJ901	1-526-838-11	INLET, AC 2P
CNP21	*1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P
CNP302	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P
CNP304	*1-506-988-11	PIN, CONNECTOR (PC BOARD) 6P
CNP305	*1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P
CNP306	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P
CNP601	*1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P
CNP903	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P
CT1-4 CV1-4	1-151-637-11	CAP, VARIABLE
CT5	1-141-290-41	CAP, VAR FILM TRIMMER
CT6	1-141-290-41	CAP, VAR FILM TRIMMER
CT7	1-141-260-00	TRIMMER, CERAMIC
CT8	1-141-245-00	TRIMMER, CERAMIC
CT9	1-141-328-11	CAP, TRIMMER
D11	8-719-918-76	DIODE GL-3PR9 (LED)
D301	8-719-921-48	DIODE MTJZ-5.6C
D303	8-719-911-19	DIODE 1SS119
D304	8-719-921-58	DIODE MTJZ-6.8A
D305	8-719-911-19	DIODE 1SS119
D306	8-719-911-19	DIODE 1SS119
D307	8-719-918-76	DIODE GL-3PR9 (LED)
D308	8-719-911-19	DIODE 1SS119
D309	8-719-911-19	DIODE 1SS119
D701	8-719-911-19	DIODE 1SS119
D702	8-719-911-19	DIODE 1SS119
D706	8-719-911-19	DIODE 1SS119
D707	8-719-911-19	DIODE 1SS119
D801	8-719-911-19	DIODE 1SS119
D802	8-719-911-19	DIODE 1SS119
D804	8-719-911-19	DIODE 1SS119
D805	8-719-911-19	DIODE 1SS119
D901	△8-719-902-17	DIODE U15G
D902	△8-719-902-17	DIODE U15G
D903	△8-719-902-17	DIODE U15G
D904	△8-719-902-17	DIODE U15G

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
F901	△1-532-286-00	FUSE, TIME-LAG, T2.5A 250V
FH901	1-533-217-31	HOLDER, FUSE
FH902	1-533-217-31	HOLDER, FUSE
FL1	1-236-022-11	FILTER, BAND PASS
HE601	1-543-525-11	HEAD, MAGNETIC (ERASE)
HRP601	1-543-319-11	HEAD, MAGNETIC (REC/PB)
IC1	8-752-035-68	IC CXA1238S
IC301	8-759-942-24	IC BA3312N
IC302	8-759-820-22	IC LA4597
IC701	8-752-033-14	IC CXA1081Q
IC702	8-752-032-32	IC CXA1182Q-Z
IC703	8-752-332-40	IC CXD1130Q
IC704	8-752-323-64	IC CXK5816M-12L
IC706	8-759-945-58	IC RC4558P
IC707	8-759-148-30	IC UPD6376
IC708	8-759-984-37	IC BA6293
IC709	8-759-984-37	IC BA6293
IC801	8-752-814-10	IC CXP5024-092Q
IC802	8-759-945-58	IC RC4558P
IC804	8-759-971-11	IC PST529D
J301	1-563-330-11	JACK (MIX MIC)
J302	1-566-891-11	JACK (HEADPHONES)
KH301	*1-565-386-11	HOLDER, CABLE 5P
KH302	*1-565-384-11	HOLDER, CABLE 3P
KH901	*1-565-385-11	HOLDER, CABLE 4P
L1	*1-422-180-11	COIL, AIR-CORE (RF)
L2	1-459-815-11	COIL (WITH CORE)
L3 L7	1-402-417-11	ANTENNA, FERRITE-ROD (LW/MW)
L4	1-406-253-11	COIL (OSC)
L5	1-402-312-11	COIL (ANT)
L6	1-406-356-11	COIL (OSC)
L8	1-406-252-11	COIL (OSC)
L9	*1-409-293-00	COIL, AIR CORE
L301	1-410-324-11	INDUCTOR 4.7UH
L302	1-410-324-11	INDUCTOR 4.7UH
L303	1-410-324-11	INDUCTOR 4.7UH
L304	1-410-324-11	INDUCTOR 4.7UH
L305	1-410-324-11	INDUCTOR 4.7UH
L701	1-410-316-11	INDUCTOR 1UH
L702	1-410-678-31	INDUCTOR 220UH
L703	1-410-316-11	INDUCTOR 1UH
L704	1-410-678-31	INDUCTOR 220UH
L705	1-424-090-11	COIL, LINE FILTER
LCD1	1-808-930-11	DISPLAY PANEL, LIQUID CRYSTAL
LF901	△1-424-150-11	TRANSFORMER, LINE FILTER
M601	1-541-625-11	MOTOR, DC
M701	X-2641-357-1	MOTOR ASSY, SLED
M702	X-2640-771-1	TURNTABLE ASSY, RP (WITH SPINDLE MOTOR)
Q1	8-729-904-36	TRANSISTOR DTC114YS
Q101	8-729-900-74	TRANSISTOR DTC143TS
Q102	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q201	8-729-900-74	TRANSISTOR DTC143TS
Q202	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE

Ref.No.	Part No.	Description
Q302	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q303	8-729-905-67	TRANSISTOR 2SD1944-K
Q304	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q305	8-729-801-84	TRANSISTOR 2SB1013-4
Q306	8-729-900-89	TRANSISTOR DTC144ES
Q307	8-729-921-65	TRANSISTOR DTC143ES
Q308	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q309	8-729-281-53	TRANSISTOR 2SC1815GR
Q701	8-729-801-84	TRANSISTOR 2SB1013-4
Q702	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q703	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q704	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q705	8-729-900-63	TRANSISTOR DTA124ES
Q706	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q711	8-729-900-36	TRANSISTOR DTC124ES
Q712	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q713	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q714	8-729-900-63	TRANSISTOR DTA124ES
Q791	8-729-900-36	TRANSISTOR DTC124ES
Q792	8-729-900-36	TRANSISTOR DTC124ES
Q801	8-729-900-63	TRANSISTOR DTA124ES
Q802	8-729-900-74	TRANSISTOR DTC143TS
Q803	8-729-920-70	TRANSISTOR 2SC1740S-QR
R3	1-249-421-11	CARBON 2.2K 5% 1/4W
R5	1-249-423-11	CARBON 3.3K 5% 1/4W
R6	1-249-441-11	CARBON 100K 5% 1/4W
R7	1-249-415-11	CARBON 680 5% 1/4W
R9	1-249-441-11	CARBON 100K 5% 1/4W
R10	1-249-397-11	CARBON 22 5% 1/4W
R11	1-249-427-11	CARBON 6.8K 5% 1/4W
R12	1-249-427-11	CARBON 6.8K 5% 1/4W
R13	1-249-405-11	CARBON 100 5% 1/4W
R14	1-249-429-11	CARBON 10K 5% 1/4W
R15	1-247-887-00	CARBON 220K 5% 1/4W
R16	1-247-887-00	CARBON 220K 5% 1/4W
R17	1-249-421-11	CARBON 2.2K 5% 1/4W
R19	1-249-415-11	CARBON 680 5% 1/4W
R20	1-249-423-11	CARBON 3.3K 5% 1/4W
R22	1-249-411-11	CARBON 330 5% 1/4W
R23	1-249-429-11	CARBON 10K 5% 1/4W
R24	1-249-413-11	CARBON 470 5% 1/4W
R101	1-249-411-11	CARBON 330 5% 1/4W
R102	1-249-410-11	CARBON 270 5% 1/4W
R103	1-249-424-11	CARBON 3.9K 5% 1/4W
R104	1-249-406-11	CARBON 120 5% 1/4W
R105	1-249-429-11	CARBON 10K 5% 1/4W
R106	1-249-431-11	CARBON 15K 5% 1/4W
R107	1-249-420-11	CARBON 1.8K 5% 1/4W
R108	1-249-414-11	CARBON 560 5% 1/4W
R109	1-249-436-11	CARBON 39K 5% 1/4W
R110	1-249-429-11	CARBON 10K 5% 1/4W
R111	1-249-432-11	CARBON 18K 5% 1/4W
R112	1-249-421-11	CARBON 2.2K 5% 1/4W
R113	1-249-405-11	CARBON 100 5% 1/4W
R114	1-247-834-11	CARBON 1.3K 5% 1/4W
R115	1-247-893-11	CARBON 390K 5% 1/4W
R116	1-249-417-11	CARBON 1K 5% 1/4W

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
R117	1-249-403-11	CARBON 68 5% 1/4W
R118	△1-217-640-11	FUSIBLE 3.3 5% 1/4W F
R119	1-249-429-11	CARBON 10K 5% 1/4W
R120	1-249-404-00	CARBON 82 5% 1/4W
R122	1-249-430-11	CARBON 12K 5% 1/4W
R123	1-249-421-11	CARBON 2.2K 5% 1/4W
R124	1-249-431-11	CARBON 15K 5% 1/4W
R125	1-249-430-11	CARBON 12K 5% 1/4W
R126	1-247-834-11	CARBON 1.3K 5% 1/4W
R127	1-249-431-11	CARBON 15K 5% 1/4W
R201	1-249-411-11	CARBON 330 5% 1/4W
R202	1-249-410-11	CARBON 270 5% 1/4W
R203	1-249-424-11	CARBON 3.9K 5% 1/4W
R204	1-249-406-11	CARBON 120 5% 1/4W
R205	1-249-429-11	CARBON 10K 5% 1/4W
R206	1-249-431-11	CARBON 15K 5% 1/4W
R207	1-249-420-11	CARBON 1.8K 5% 1/4W
R208	1-249-414-11	CARBON 560 5% 1/4W
R209	1-249-436-11	CARBON 39K 5% 1/4W
R210	1-249-429-11	CARBON 10K 5% 1/4W
R211	1-249-432-11	CARBON 18K 5% 1/4W
R212	1-249-421-11	CARBON 2.2K 5% 1/4W
R213	1-249-405-11	CARBON 100 5% 1/4W
R214	1-247-834-11	CARBON 1.3K 5% 1/4W
R215	1-247-893-11	CARBON 390K 5% 1/4W
R216	1-249-417-11	CARBON 1K 5% 1/4W
R217	1-249-403-11	CARBON 68 5% 1/4W
R218	△1-217-640-11	FUSIBLE 3.3 5% 1/4W F
R219	1-249-429-11	CARBON 10K 5% 1/4W
R220	1-249-404-00	CARBON 82 5% 1/4W
R222	1-249-430-11	CARBON 12K 5% 1/4W
R223	1-249-421-11	CARBON 2.2K 5% 1/4W
R224	1-249-431-11	CARBON 15K 5% 1/4W
R225	1-249-430-11	CARBON 12K 5% 1/4W
R226	1-247-834-11	CARBON 1.3K 5% 1/4W
R227	1-249-431-11	CARBON 15K 5% 1/4W
R301	1-249-421-11	CARBON 2.2K 5% 1/4W
R302	1-249-411-11	CARBON 330 5% 1/4W
R303	1-247-891-00	CARBON 330K 5% 1/4W
R304	1-249-421-11	CARBON 2.2K 5% 1/4W
R305	1-249-409-11	CARBON 220 5% 1/4W
R307	1-247-903-00	CARBON 1M 5% 1/4W
R308	1-249-425-11	CARBON 4.7K 5% 1/4W
R309	1-249-405-11	CARBON 100 5% 1/4W
R310	1-249-405-11	CARBON 100 5% 1/4W
R311	△1-217-640-11	FUSIBLE 3.3 5% 1/4W F
R312	△1-217-637-00	FUSIBLE 1 5% 1/4W F
R314	1-249-411-11	CARBON 330 5% 1/4W
R315	1-249-417-11	CARBON 1K 5% 1/4W
R316	1-249-437-11	CARBON 47K 5% 1/4W
R317	1-249-407-11	CARBON 150 5% 1/4W
R318	1-249-425-11	CARBON 4.7K 5% 1/4W
R319	1-249-425-11	CARBON 4.7K 5% 1/4W
R320	1-249-389-11	CARBON 4.7 5% 1/4W
R321	1-249-408-11	CARBON 180 5% 1/4W
R322	1-249-437-11	CARBON 47K 5% 1/4W
R323	1-249-435-11	CARBON 33K 5% 1/4W
R325	1-249-425-11	CARBON 4.7K 5% 1/4W

Ref.No.	Part No.	Description			
R329	1-249-416-11	CARBON	820	5%	1/4W
R330	1-247-816-11	CARBON	240	5%	1/4W
R332	1-249-435-11	CARBON	33K	5%	1/4W
R701	1-249-433-11	CARBON	22K	5%	1/4W
R702	1-249-417-11	CARBON	1K	5%	1/4W
R703	1-249-433-11	CARBON	22K	5%	1/4W
R704	1-249-397-11	CARBON	22	5%	1/4W
R705	1-247-806-11	CARBON	91	5%	1/4W
R711	1-249-428-11	CARBON	8.2K	5%	1/4W
R712	1-247-856-00	CARBON	11K	5%	1/4W
R713	1-249-441-11	CARBON	100K	5%	1/4W
R714	1-249-425-11	CARBON	4.7K	5%	1/4W
R715	1-249-441-11	CARBON	100K	5%	1/4W
R716	1-247-886-11	CARBON	200K	5%	1/4W
R717	1-249-422-11	CARBON	2.7K	5%	1/4W
R718	1-247-903-00	CARBON	1M	5%	1/4W
R719	1-249-417-11	CARBON	1K	5%	1/4W
R720	1-247-883-00	CARBON	150K	5%	1/4W
R721	1-249-437-11	CARBON	47K	5%	1/4W
R722	1-249-429-11	CARBON	10K	5%	1/4W
R723	1-249-441-11	CARBON	100K	5%	1/4W
R724	1-249-438-11	CARBON	56K	5%	1/4W
R725	1-247-885-00	CARBON	180K	5%	1/4W
R726	1-249-437-11	CARBON	47K	5%	1/4W
R727	1-249-441-11	CARBON	100K	5%	1/4W
R728	1-247-854-11	CARBON	9.1K	5%	1/4W
R729	1-247-894-11	CARBON	430K	5%	1/4W
R730	1-249-441-11	CARBON	100K	5%	1/4W
R731	1-215-457-00	METAL	33K	1%	1/6W
R732	1-215-457-00	METAL	33K	1%	1/6W
R733	1-247-895-00	CARBON	470K	5%	1/4W
R734	1-249-417-11	CARBON	1K	5%	1/4W
R735	1-249-417-11	CARBON	1K	5%	1/4W
R736	1-249-429-11	CARBON	10K	5%	1/4W
R743	1-215-438-00	METAL	5.1K	1%	1/6W
R744	1-215-461-00	METAL	47K	1%	1/6W
R745	1-215-453-00	METAL	22K	1%	1/6W
R746	1-215-461-00	METAL	47K	1%	1/6W
R747	1-249-431-11	CARBON	15K	5%	1/4W
R748	1-249-422-11	CARBON	2.7K	5%	1/4W
R749	1-247-834-11	CARBON	1.3K	5%	1/4W
R750	1-249-414-11	CARBON	560	5%	1/4W
R751	1-247-903-00	CARBON	1M	5%	1/4W
R752	1-249-430-11	CARBON	12K	5%	1/4W
R753	1-215-438-00	METAL	5.1K	1%	1/6W
R754	1-215-461-00	METAL	47K	1%	1/6W
R755	1-215-453-00	METAL	22K	1%	1/6W
R756	1-215-461-00	METAL	47K	1%	1/6W
R757	1-247-887-00	CARBON	220K	5%	1/4W
R758	1-249-422-11	CARBON	2.7K	5%	1/4W
R759	1-247-834-11	CARBON	1.3K	5%	1/4W
R760	1-249-414-11	CARBON	560	5%	1/4W
R761	1-247-903-00	CARBON	1M	5%	1/4W
R762	1-249-422-11	CARBON	2.7K	5%	1/4W
R763	1-249-422-11	CARBON	2.7K	5%	1/4W
R764	1-247-887-00	CARBON	220K	5%	1/4W
R765	1-249-395-11	CARBON	15	5%	1/4W

Ref.No.	Part No.	Description			
R766	1-249-395-11	CARBON	15	5%	1/4W
R768	1-249-405-11	CARBON	100	5%	1/4W
R770	1-215-453-00	METAL	22K	1%	1/6W
R771	1-215-453-00	METAL	22K	1%	1/6W
R772	1-215-453-00	METAL	22K	1%	1/6W
R773	1-215-453-00	METAL	22K	1%	1/6W
R774	1-215-429-00	METAL	2.2K	1%	1/6W
R775	1-215-457-00	METAL	33K	1%	1/6W
R776	1-215-457-00	METAL	33K	1%	1/6W
R777	1-215-457-00	METAL	33K	1%	1/6W
R778	1-215-433-00	METAL	3.3K	1%	1/6W
R779	1-247-868-11	CARBON	36K	5%	1/4W
R780	1-249-435-11	CARBON	33K	5%	1/4W
R781	1-247-876-11	CARBON	75K	5%	1/4W
R782	1-249-435-11	CARBON	33K	5%	1/4W
R783	1-249-417-11	CARBON	1K	5%	1/4W
R784	1-249-429-11	CARBON	10K	5%	1/4W
R785	1-249-410-11	CARBON	270	5%	1/4W
R786	1-249-425-11	CARBON	4.7K	5%	1/4W
R787	1-212-861-11	FUSIBLE	15	5%	1/4W
R789	1-249-433-11	CARBON	22K	5%	1/4W
R791	1-247-838-00	CARBON	2K	5%	1/4W
R792	1-249-437-11	CARBON	47K	5%	1/4W
R793	1-249-429-11	CARBON	10K	5%	1/4W
R794	1-249-405-11	CARBON	100	5%	1/4W
R801	1-249-435-11	CARBON	33K	5%	1/4W
R802	1-249-435-11	CARBON	33K	5%	1/4W
R803	1-249-435-11	CARBON	33K	5%	1/4W
R805	1-249-437-11	CARBON	47K	5%	1/4W
R806	1-249-437-11	CARBON	47K	5%	1/4W
R807	1-249-441-11	CARBON	100K	5%	1/4W
R808	1-249-441-11	CARBON	100K	5%	1/4W
R809	1-249-437-11	CARBON	47K	5%	1/4W
R810	1-249-405-11	CARBON	100	5%	1/4W
R811	1-249-405-11	CARBON	100	5%	1/4W
R821	1-249-441-11	CARBON	100K	5%	1/4W
R851	1-215-457-00	METAL	33K	1%	1/6W
R852	1-247-893-11	CARBON	390K	5%	1/4W
R853	1-249-441-11	CARBON	100K	5%	1/4W
R854	1-247-895-00	CARBON	470K	5%	1/4W
R855	1-249-441-11	CARBON	100K	5%	1/4W
RV1	1-228-995-00	RES, ADJ, CARBON 22K			
RV301	1-238-430-11	RES, VAR, CARBON 20K/20K (VOLUME)			
RV302	1-238-431-11	RES, VAR, CARBON 20K/20K (TONE)			
RV701	1-230-497-11	RES, ADJ, CARBON 20K			
RV702	1-230-498-11	RES, ADJ, CARBON 50K			
RV703	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K			
RV704	1-230-497-11	RES, ADJ, CARBON 20K			
RV705	1-230-497-11	RES, ADJ, CARBON 20K			
S1	1-571-147-11	SWITCH, LEVER SLIDE (BAND)			
S301	1-570-933-11	SWITCH, LEVER SLIDE (REC/PB)			
S302	1-572-235-11	SWITCH, SLIDE (FUNCTION)			
S303	1-571-807-11	SWITCH, SLIDE (FM MODE/ISS)			
S601	1-554-495-00	SWITCH, LEAF (MOTOR POWER)			
S801	1-571-274-11	SWITCH, LEAF (OPEN/CLOSE)			

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
S802	1-571-274-11	SWITCH, LEAF (LIMIT)
S803	1-554-303-21	SWITCH, KEYBOARD (▶)
S804	1-554-303-21	SWITCH, KEYBOARD (■)
S805	1-554-303-21	SWITCH, KEYBOARD (▶▶)
S806	1-554-303-21	SWITCH, KEYBOARD (◀◀)
S807	1-554-303-21	SWITCH, KEYBOARD (◀▶)
S808	1-554-303-21	SWITCH, KEYBOARD (PLAY MODE)
S809	1-554-303-21	SWITCH, KEYBOARD (REMAIN)
SP801	1-544-154-11	SPEAKER
SP802	1-544-154-11	SPEAKER
T1	1-404-355-00	TRANSFORMER, IF
T301	1-433-268-00	TRANSFORMER, BIAS OSCILLATOR
T901	△.1-449-894-11	(UK).....TRANSFORMER, POWER
T901	△.1-449-896-11	(AEP,WG,IT)...TRANSFORMER, POWER
W711	*1-562-650-11	SOCKET, CONNECTOR 8P
W716	1-506-569-11	PIN, CONNECTOR 3P
W801	*1-566-973-11	PIN, CONNECTOR (PC BOARD) 8P
W802	*1-568-454-11	PIN, CONNECTOR (PC BOARD) 9P
W803	*1-568-455-11	PIN, CONNECTOR (PC BOARD) 10P
X801	1-567-094-00	VIBRATOR, CERAMIC 3.58MHz
XF701	1-567-908-11	VIBRATOR, CRYSTAL 16.9344MHz

ACCESSORY & PACKING MATERIAL

△.1-555-234-00	(AEP,WG,IT)...CORD, POWER
△.1-558-032-11	(UK).....CORD, POWER
3-751-268-11	(AEP,WG,UK)...MANUAL, INSTRUCTION (ENGLISH,FRENCH,SPANISH,GERMAN)
3-751-268-41	(AEP,WG,IT)...MANUAL, INSTRUCTION (DUTCH,SWEDISH,ITALIAN,PORTUGUESE)
*4-914-253-01	LABEL, CLASS (1)
*4-936-048-01	INDIVIDUAL CARTON
*4-936-045-01	CUSHION (L)
*4-936-046-01	CUSHION (R)

Note: The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.